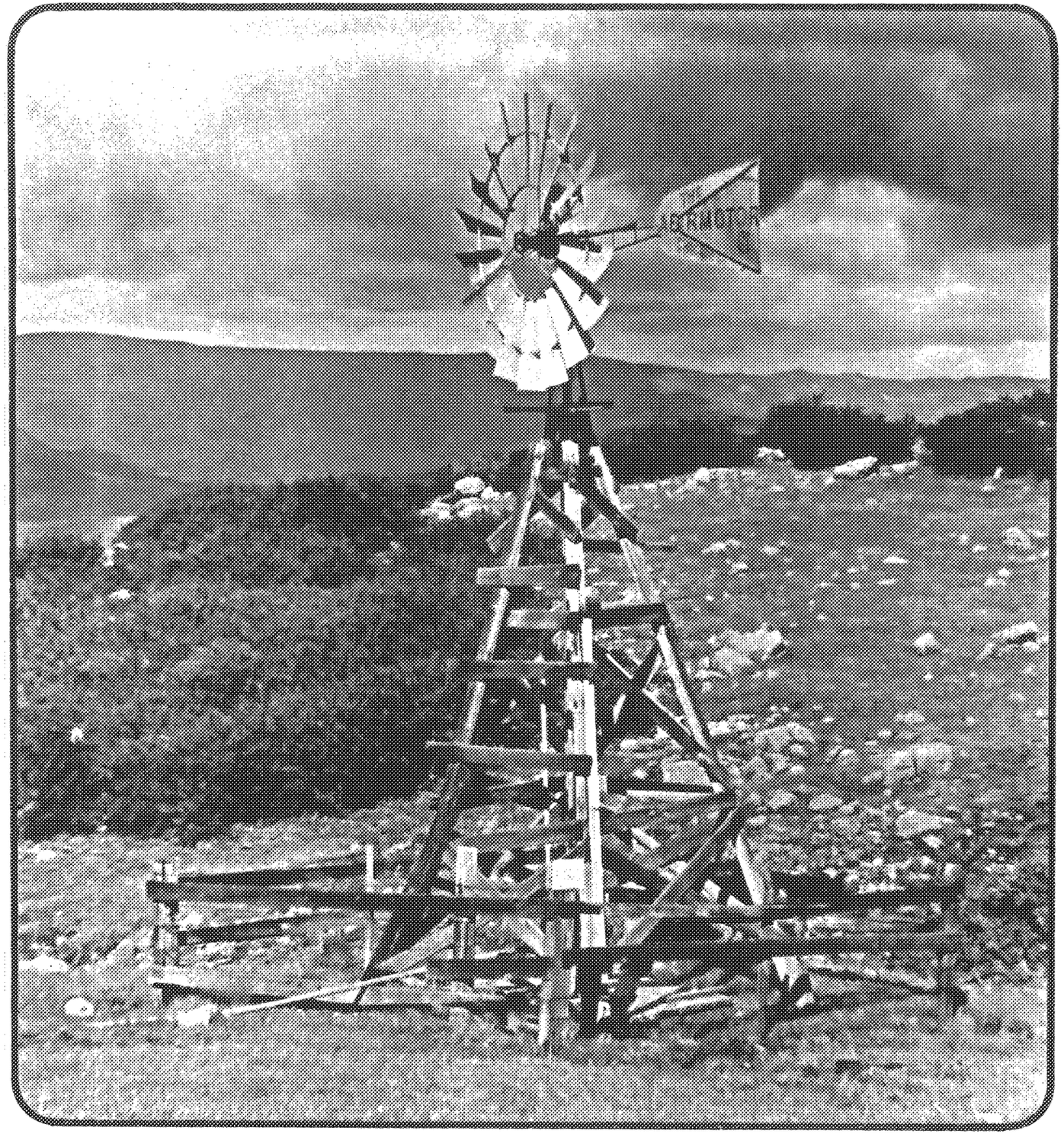

A SUMMARY REPORT

MASTER WATER AND SEWERAGE PLAN

SAN LUIS OBISPO COUNTY CALIFORNIA

DECEMBER 1972

CDM INC. ENVIRONMENTAL ENGINEERS

THE WATER AND SEWERAGE PORTION OF THE PUBLIC FACILITIES ELEMENT OF THE SAN LUIS OBISPO COUNTY GENERAL PLAN

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PREFACE

Subsequent to publication of the final "Report on Master Water and Sewerage Plan" in May, 1972, the California State Water Resources Control Board adopted new regulations concerning the discharge of wastewater to the ocean. In addition, the State Board is developing new regulations concerning such discharges to bays, estuaries, and inland waters.

In order to be assured that the Master Water and Sewerage Plan will be in accordance with such regulations upon adoption, a supplemental appendix, Appendix E, has been added to the original report to reflect the impact of these regulations on the recommended plans. Appendix E also contains supplemental conclusions and recommendations which supersede several of those contained in Chapter VIII of the main report, based on the new regulations and information presented at the initial hearing before the County Planning Commission on August 30, 1972.

This Summary Report has been prepared to facilitate the review of the final recommended plan by all concerned at the time of subsequent hearings by the County Planning Commission and the Board of Supervisors concerning the final adoption of a Master Water and Sewerage Plan.

This Summary Report contains in brief format the basic proposals and recommendations of the full report, as amended. Reference should be made to the full report for details and assumptions underlying the recommended program and for specific plates and tables not included in summary.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

As a result of the engineering analyses of the plans and programs summarized herein, a number of significant conclusions and recommendations have been made and are presented in this section.

Summary of Conclusions

1. San Luis Obispo County possesses an abundance of attractive natural resources, including a very comforrable year-round climate and scenic beauty which will tend to encourage increasingly large migrations of population to the County after 1980.

2. Through adoption and periodic updating of the San Luis Obispo County General Plan and the General Plan of the incorporated cities of the County, the Board of Supervisors and the City Councils have attempted to formulate logical land use and development regulations which will permit the orderly development of land for urban and suburban purposes in and around existing urban centers so as to maintain as nearly as possible the informal and comfortable living environment which has characterized the County to date.

3. The natural attractions of San Luis Obispo County, coupled with problems associated with population congestion in the Los Angeles and San Francisco Bay metropolitan areas, will have a significant influence on the post-1980 migration of people to San Luis Obispo, and this migration will have a greater influence on future population increases in the County than will the internal relationships of birth and death.

4. Regulatory activities and policies of the County Board of Supervisors, City Councils and Planning Commissions as carried out through administration of subdivision, lot split and building ordinances can have great influence on the rate of population growth and location within the County where such growth will occur. Execution of such policies will, in turn, effect the

timing of need for, and sizing of water and sewerage facilities.

5. The population of San Luis Obispo County is conservatively projected to reach a level of 133,000 by 1980 and will approach a quarter of a million by the turn of the century, based on present growth indicators.

6. This projected growth should be re-examined at intervals of no greater than five years so that adequate advanced planning can be accomplished in time to provide the essential water and sewerage services to accommodate the actual growth. In localized areas, the influx of population has in the past, and will in the future, be relatively unrelated to the availability of long-range water supplies or sewerage services.

7. Substantial overall increases in irrigation development are not expected to occur in San Luis Obispo County except for citrus and avocado orchards and wine grape vineyards in certain localized areas. By the turn of the century, it is anticipated that the total citrus and subtropical crop acreage will undergo a 13-fold increase from the present level of nearly 700 acres to nearly 9,000 acres.

8. The anticipated growth in population and irrigation development can take place in many areas of the County by overdrafting or mining of the local groundwater supply. Such activities will tend to provide a false sense of security to citizens as to the performance and realibility of their groundwater resources.

9. Future economic demands for supplemental water supplies in San Luis Obispo County for urban and agricultural purposes are estimated to approach 4,000 acre-feet per year by 1980 and to exceed 25,000 acre-feet per year by the year 2000.

10. The Nacimiento River and State Water Project supplies are the most economical sources of water available to meet projected demands for supplemental water within San Luis Obispo County over the next 30 years.

11. The full Nacimiento Project entitlement of 17,500 acre-feet per year can be effectively utilized within the County by the year 2000.

12. Water deliveries from the State Water Project can be effectively utilized within the County starting in about 1980 as currently scheduled. There is a high probability that the full entitlement of 25,000 acre-feet per year will be required in the County. The need for at least 15,000 acre-feet per annum by the year 2000 is clearly indicated. The need for the balance of the entitlement will depend upon the cost and availability of groundwater from the Santa Maria Basin to users in the Nipomo Mesa area, and the reliability and dependability of water from that source, and possible amendments to repayment provisions of the existing State Water Project contract.

13. Supplemental water to meet projected economic demands through the year 2000 can be conveyed to service areas within San Luis Obispo County, excluding local distribution and treatment facilities, at equivalent unit costs of from about $45 to about $200 per acre-foot, and at a capital cost of about $19,000,000 based on 1971 price levels.

14. On the basis of a re-evaluation of the many potential water supply sources available to the County which have been studied over the past several years, and additional considerations developed herein, the plan evaluated in this report which offers the most economic and practical means of satisfying County-wide short- and long-term water requirements would consist of the following major components:

- Nacimiento water to be delivered to the Upper Salinas, North Coastal, and Central Coastal Study Areas beginning in 1975, with use being made of regulatory storage capacity in Whale Rock Reservoir for coastal deliveries and releases into Jack Creek to recharge the Paso Robles Ground-

water Basin upstream of the Templeton, Paso Robles and San Miguel well fields. Deliveries would be made to Santa Margarita and Atascadero from a branch pipeline from the State Water Project, or from the Salinas Project Conduit, based on contracts providing for the exchange of water between the Salinas Reservoir and Nacimiento Reservoir and setting forth the terms and conditions for the delivery to and regulation of such exchange water in Whale Rock Reservoir.

- State Water Project water to be delivered to the San Luis Obispo Bay and South Coastal Study Areas beginning in 1980.

- Water needs in the Nipomo Mesa and Cuyama Study Areas to be met by appropriation of groundwater from the adjacent Santa Maria Basin or, alternatively, from the State Water Project beginning by no later than the year 1980.

15. A more precise definition of potential water demands, together with probable prices and terms under which supplemental water can be made available is required before the alternative water supply system recommended herein can be adopted. This need can most appropriately be met at this time by the drafting of water contracts and the commencement of actual contract negotiations. The willingness of water supply agencies to execute contracts for supplemental water supplies should form the principal basis for determining the size and timing of construction of additional water supply facilities.

16. The status of the Diablo Canyon Desalination Plant, previously proposed jointly by the Office of Saline Water and the California Department of Water Resources, will remain uncertain until such time as it is authorized by the Congress and the State Legislature.

17. The use of desalted water from the proposed Diablo Canyon Desalination Plant would not be economically justified if the users must pay all production costs. If desalinized water can be made available to users in the San Luis Obispo Bay Study Area at an equivalent unit cost comparable to State Water Project costs, then the construction of the remaining portions of the California Aqueduct Coastal Branch facilities could be deferred from 10 to 15 years. This program would be advantageous to the County if the scheduled State Water Project payments were deferred accordingly by amendment of the existing State Water Project contract.

18. The availability of water from the proposed Diablo Canyon Desalination Plant could also provide means of deferring the construction of portions of the Nacimiento River delivery system required for service to the Central Coastal Study Area. The terms and conditions for the provision of desalinized water in that area would also have to be competitive with the unit cost of water from alternative sources.

19. A distribution system will be required to market water from the proposed Diablo Canyon Desalination Plant. The main transmission line being contemplated as part of that system is depicted on Plate 7. A potential market for water from such a system within San Luis Obispo County would extend from Cayucos to the Santa Maria River.

20. The practice of mining, or overdrafting the groundwater in the Upper Salinas and Cuyama Study Areas will continue as long as pumping costs allow a profit margin to the farmers, or until some presently unforeseen alternative economic supply becomes available. The annual overdraft to supply water to those agricultural users who are unable to pay for importation of water could amount to more than 45,000 acre-feet in these two basins by the year 2000.

21. Implementation of the proposed comprehensive water plan will assure the project beneficiaries of water supplies adequate in quantity to meet their growing economic needs at the lowest possible cost, and acceptable for use within widely accepted and appropriate standards and guidelines of water quality.

22. The San Luis Obispo County Flood Control and Water Conservation District has acquired the right to develop unappropriated water required to implement the comprehensive water plan proposed herein through permits issued by the State of California, and through contracts with the Monterey County Flood Control and Water Conservation District and the State of California.

23. The San Luis Obispo County Flood Control and Water Conservation District is the logical agency to implement the comprehensive water plan recommended herein. With the exception of the need for an appropriate entity or entities for the distribution of irrigation water supplies in local areas, the existing agencies comprise an adequate collective administrative body to accomplish County-wide distribution of the necessary water supplies envisioned under the plan presented herein through contracts with the San Luis Obispo County Flood Control and Water Conservation District. In some areas, such as Los Osos Valley, local water service agencies may find it to their advantage to consolidate their systems and to form a larger regional water service agency.

24. Although some areas in the County have wastewater treatment facilities adequate for many years into the future, others will require expansion in the near future. Some communities have no sewerage facilities.

25. The goal of sewerage planning in San Luis Obispo County is to reuse wastewater effluent to the maximum extent possible and to cease discharges to the ocean and to surface streams.

26. The San Simeon Wastewater Treatment Plan presently discharges its effluent to the ocean. Because of limited areas that could serve for year-round reuse of effluent near San Simeon, wastes from San Simeon may eventually have to be transported to Cambria for treatment and disposal. At Cambria, secondary effluent is discharged by spray irrigation at the plant site. As sewage flows increase, the available area may be insufficient and other disposal and reuse sites, possibly near Perry Creek or Santa Rosa Creek, will be needed.

27. Wastes from Cayucos and Morro Bay are now treated at the Morro Bay Wastewater Treatment Facility and discharged to the ocean. Several sites for potential reuse exist in the Morro Bay area, but if year-round reuse is to be implemented, discharge to the groundwater may be necessary, possibly near Morro Creek.

28. The Baywood-Los Osos area is now unsewered. A likely site for waste treatment and disposal for this area is located near Warden Lake.

29. Sewerage services can be provided in the Baywood-Los Osos area by the existing Baywood Park County Water District or by creation of a new entity with broad financial powers.

30. The interceptor system conveying wastewater from the Cayucos Sanitary District to Morro Bay is inadequate to carry some of the peak flows expected. The installation of larger pumps and construction of relief sewers and force mains will be required in the near future.

31. The City of San Luis Obispo will require expansion of its present treatment facilities in the early 1980's. Several potential uses for effluent from the City of San Luis Obispo sewage treatment plant now exist with each demanding differing qualities of water, hence, not all wastes will need to be treated to the same degree.

A study program is needed to determine facilities required to maximize reuse.

32. When the Avila Beach outfall is abandoned, the Avila Sanitary District will have to provide secondary treatment of its wastes either at its existing plant or elsewhere. Effluent or untreated wastes may be pumped to the San Luis Bay Property Treatment Plant for disposal.

33. After future expansion, the Pismo Beach Sewage Treatment Plant, together with the South San Luis Obispo County Sanitation District Sewage Treatment Plant, should have adequate treatment capacity for their respective service areas until about the year 2000. At that time, the Pismo Beach Plant should be abandoned and wastes from Pismo Beach should be treated at an expanded South San Luis Obispo County Sanitation District Plant and outfall system.

34. Of the several potential sites for water reuse near the South San Luis Obispo County Sanitation District, the best site for reuse appears to be in the Nipomo Mesa area where groundwater recharge may be conducted to replace the ocean outfall. Potential areas for the land disposal or possible reuse of a portion of the Pismo Beach effluent may exist near Price Canyon.

35. In the future, Nipomo will require a sewage collecting system terminating at a treatment plant near Nipomo Creek. The most desirable means of disposal will be by groundwater recharge.

36. The town of Santa Margarita, and the Templeton Sanitary District require early construction of sewerage systems. Templeton has negotiated a contract providing for the construction of an interceptor to Paso Robles and the provision of treatment capacity in the Paso Robles Treatment Plant.

37. It appears to be more economical for the communities of Santa Margarita and Garden Farms to construct a joint sewage treatment facility than for each to construct a separate plant.

38. The Atascadero County Sanitation District's recently expanded treatment plant should be adequate until 1980, except for percolation facilities. Delay in the construction of the planned outfall line and percolation facilities will result in increased costs due to escalation.

39. The recently enlarged Paso Robles Sewage Treatment Plant should provide adequate capacity for the City of Paso Robles and the Templeton Sanitary District for many years. The City will require an interceptor to some areas east of the Salinas River.

40. San Miguel is planning a new plant, which will be adequate for about 20 years. Because of the expense of a single sewerage system for the Nacimiento area, several plants may be required. At some time, Shandon may construct a sewage treatment plant and dispose of wastes by evaporation and percolation.

41. Water use and sewerage requirements in San Luis Obispo County should be monitored, and projected needs for supplemental water supplies and facilities and sewerage services and facilities should be re-evaluated at intervals of no greater than five years, so as to avoid the adverse economic effects of excessive caution or optimism in the staging and sizing of facilities.

42. A basic data collection program providing for the monitoring of the quantitative and qualitative effects of groundwater overdraft throughout San Luis Obispo County, together with the continuation and expansion of other elements of the basic hydrologic data collection program of the San Luis Obispo County Flood Control and Water Conservation District is of significant and long-range economic value to the entire County.

43. Final results of the current investigation of potential flood control measures by the U.S. Army Corps of Engineers will not be available for at least two or three years. Results of that investigation will demonstrate the extent to which flood control and water conservation features may be economically combined into multipurpose projects in the Upper Salinas Valley.

44. Limited storage capacities and tributary drainage areas for the Santa Rita and Jack Creek reservoirs appear to limit the utility of inclusion of storage capacity in either reservoir for flood control purposes. Accordingly, the two projects may be considered as potential units of the San Luis Obispo County Water Plan without fear of jeopardy of any future downstream flood control program.

Summary of Recommendations

On the basis of the conclusions reached herein, as previously noted, it is recommended that:

1. The comprehensive water and sewerage plans recommended herein be adopted by the Board of Supervisors of the County of San Luis Obispo and by the City Councils of the six incorporated cities of the County as appropriate elements of the County and City General Plans.

2. The comprehensive water plan consist of the following features, all listed in Table V-4, and Plates 6A through 6G and Plate A:

Facility	Capacity	Capital Cost
Pumping Plants		
Nacimiento Reservoir	20.7 cfs	$ 479,000
Whale Rock-North Coast	3.7 cfs	58,910
Whale Rock-Central Coast	9.0 cfs	34,250
Pipelines		
Nacimiento-Jack Creek 30"	42,240 feet	2,549,280
Jack Creek-Old Creek 27"	66,000 feet	1,521,550
Whale Rock-Cambria 14"	82,500 feet	919,050
Cambria-San Simeon 12"	47,520 feet	393,940
Whale Rock-Morro Bay 21"	31,680 feet	559,150
Salinas Reservoir-Atascadero 12"	52,270 feet	433,320
Storage Facilities		
Whale Rock-North Coast	1.2 mg	124,000
Whale Rock-Central Coast	2.9 mg	304,000
Whale Rock Reservoir Regulatory Storage Capacity	3,000 AF/yr	724,500
California State Water Project	15,000 AF/yr	10,926,030
Total		$19,026,980

3. Final project feasibility and preliminary design investigations be conducted on the facilities recommended for delivery of Nacimiento water to the Salinas Valley and Coastal Areas, and on facilities to deliver Salinas Reservoir water to the Salinas Valley following contract negotiations with potential contracting agencies to establish a more definite demand for water.

4. Upon the demonstration of actual need and willingness to contract for supplemental water supplies by local agencies, resulting from the foregoing action, the San Luis Obispo County Flood Control and Water Conservation District should implement the comprehensive water plan recommended herein.

5. Negotiations be instituted with the California Department of Water Resources leading to the modification of repayment provisions of the existing State Water Project contract whereby water could be marketed in San Luis Obispo County for agricultural purposes under terms and conditions more appropriate for agricultural economic conditions.

6. Close liaison be maintained with the Santa Barbara County Flood Control and Water Conservation District in order to coordinate planning and decisions relating to the State Water Project contracting program and the proposed Federal-State Diablo Canyon Desalination Plant.

7. A comprehensive and systematic basic data collection program be developed and implemented to observe and record significant water supply and sewerage system operational data, as well as significant water resource and wastewater quality data, in order to provide necessary information for the future updating of water and sewerage plans recommended herein.

8. The Board of Supervisors of the County of San Luis Obispo continue to exercise diligence in all matters affecting the maintenance of existing water rights so as to assure the provision of ecnomical water supplies for all areas of the County as required.

9. The Board of Supervisors and water agency Boards of Directors study the long-range economic implications of continued overdrafting of local groundwater resources and investigate means whereby the adverse affects thereof may be mitigated.

10. The Board of Supervisors carefully consider the long-range economic impact on all areas of San Luis Obispo County resulting from decisions to allocate water from either the Nacimiento or State Water Projects to any particular area or agency. The development of a well-reasoned allocation policy for water from these two projects, giving full recognition to water costs and economic relationships discussed herein, should be given the highest of priorities.

11. The comprehensive sewerage program consist of the following elements:

a. Wastewater reclamation and reuse for all possible beneficial purposes shall be advanced as the paramount objective in the planning of all future wastewater treatment systems.

b. The ocean discharge of treated effluent from the existing San Simeon, Morro Bay, Avila Beach, Pismo Beach and South San Luis Obispo County Sanitation District wastewater treatment plants should eventually be eliminated in favor of a reclamation program leading to the total reuse of said wastewaters for beneficial purposes. Implementation of such plans should commence prior to the dates the hydraulic capacities of existing outfalls are reached.

c. If suitable sites for the reuse of wastewaters from the San Simeon plant cannot be identified, said wastewaters should be conveyed to the site of the Cambria Wastewater Reclamation Plant for eventual treatment and disposal in the vicinity thereof for beneficial purposes.

d. A regional wastewater reclamation plant should be located at Cambria, where all wastewaters having been treated to the necessary level, will be delivered to potential areas of benefical reuse. The initial phase of this recommendation should take place in 1975, or when the existing treatment facility is expanded.

e. A sewerage system should be developed for the Baywood-Los Osos area at the earliest possible date, including the provision of wastewater reclamation facilities and facilities for the conveyance of treated wastewater to potential areas of beneficial reuse.

f. The capacity of existing interceptor facilities between Cayucos and Morro Bay should be expanded at the earliest possible date.

g. The City of San Luis Obispo wastewater treatment plant should eventually serve as a regional wastewater reclamation plant, and properly treated wastewater should be conveyed therefrom to potential areas of beneficial reuse. Implementation of the initial phase of this recommendation should occur in the early 1980's.

h. At such time as the Avila Sanitary District can no longer dispose of its effluent to the ocean, the District should participate in the construction of a regional wastewater reclamation plant, from which wastewater so treated would be conveyed to potential areas of beneficial reuse.

i. Unless suitable areas for beneficial reuse of reclaimed wastewater from the Pismo Beach plant can be identified, said wastewaters should be conveyed to the South San Luis Obispo County Sanitation District wastewater reclamation facilities for final treatment and subsequent conveyance therefrom to areas of potential beneficial reuse.

j. The South San Luis Obispo County Sanitation District wastewater treatment plant should eventually serve as a regional wastewater reclamation facility. Full implementation of this recommendation should take place prior to the year 2000.

k. The community of Nipomo should construct a wastewater reclamation facility and transport its treated wastewaters therefrom to areas of potential beneficial reuse. Implementation of this recommendation should await demonstrated evidence of groundwater quality degradation from existing septic tanks.

l. Santa Margarita, Garden Farms, Templeton, Shandon, and the urbanizing areas southeast of the City of San Luis Obispo should install sewerage collection systems. Installation of systems for Santa Margarita and Garden Farms should await demonstrated evidence of groundwater quality degradation from existing septic tanks. The Templeton Sanitary District has already taken steps to install its system.

m. Santa Margarita and Garden Farms should construct a joint wastewater reclamation facility, with ultimate disposal to the Paso Robles Groundwater Basin in accordance with the scheduling recommended under Item l.

n. Templeton should transport its wastewaters via an interceptor to Paso Robles where said wastewaters should be treated and ultimately recharged to the Paso Robles Groundwater Basin, in accordance with plans now underway.

o. The Atascadero County Sanitation District should install outfall and percolation facilities for the ultimate disposal of its treated effluent to the Paso Robles Groundwater Basin at the earliest possible date. Additional treatment facilities will be required about 1980.

p. The Paso Robles Wastewater Treatment Plant should serve as a regional wastewater reclamation facility, initially serving the City of Paso Robles and Templeton.

q. San Miguel should construct a new wastewater reclamation facility and dispose of its effluent through recharge of the Paso Robles Groundwater Basin at the earliest possible date.

r. Shandon should construct a wastewater reclamation facility and dispose of its effluent through recharge of the Paso Robles Groundwater Basin subsequent to installation of a new community system.

s. All sewerage agencies in San Luis Obispo County should institute continuing programs leading to the identification of means whereby the beneficial reuse of their wastewaters can be maximized at the lowest possible cost. In such economic analyses, wastewaters to be reused should be considered as a basic water resource to be managed and protected in the same manner as naturally available water supplies. Such analyses should also consider the economic benefits accruing to the entire County resulting from a lower demand for imported water.

t. Sewer collection systems in urban areas should be constructed where septic tanks and cess pools present hazardous conditions to health and existing water sources. Priority should be given to the construction of these collection systems.

INTRODUCTION

San Luis Obispo County has conducted many studies on the requirements for water supply; for wastewater collection and treatment; and on planning, but it has not heretofore prepared a County-wide plan encompassing all these areas. The County population has been increasing slowly but steadily for about the past 20 years. Current evidence indicates that the past growth rate will continue into the future, and probably increase. Regardless of the actual growth rates that will occur, it is important that the County plan accommodate the increased water and sewerage demands that will be made by the larger population. Without advanced planning, unnecessary duplication of effort and a proliferation of small, scattered, and excessively costly facilities will result. With a suitable master plan, facilities that will be adequate for many years in the future can be designed and constructed most economically and within the financial capacity of the benefiting areas. The objective of this plan is, therefore, to prepare for the logical, economical, and orderly expansion of water and sewerage systems in San Luis Obispo County, and to insure the maximum possible coordination of the two systems so as to achieve a truly comprehensive water resource management program.

Scope of Report

The objective of the investigation leading to this report was to prepare a preliminary plan for the logical, economical, and orderly expansion of water and sewerage facilities in San Luis Obispo County. Because many factors affect water and sewerage needs for any area, this study also concerns itself with an investigation of these factors. These factors include the physical environment, population, industrial and agricultural development and public facilities, including schools, hospitals, public transportation, and utilities.

Planning Goals and Standards

Four major guides stand out as goals for water and sewerage planning in San Luis Obispo County. The first guide, for drinking water, comes from the United States Public Health Service Drinking Water Standards of 1962 and from the California State Board of Public Health. Those standards, which were established for water to be used on interstate carriers, have received general acceptance in wide application. Those standards which apply to water delivered to the consumer, have set limits on physical, chemical, radiological, and bacterial quality. Potential and existing sources of drinking water were compared with these standards to insure that potable water will be provided to the consumer.

The second guide applies to standards for providing agricultural water that will not be injurious to plants. For this consideration, criteria recommended by the California Department of Water Resources for agricultural water have been employed.

The third guide concerns itself with protection of surface water, groundwater, and coastal water through proper treatment and disposal of wastewater. The Interim Water Quality Management Plan for the Central Coastal Basin prepared by the California Regional Water Quality Control Board's Central Coast Region, and subsequently approved by the State Water Resources Control Board and the Environmental Protection Agency, presented water quality objectives and outlined restrictions on wastewater discharges. This plan has been modified in part by the recently adopted ocean disposal policy of the State Water Resources Control Board.

The fourth guide applies to standards for various uses of reclaimed water. These standards are described in the California Administration Code.

Basis for Economic Evaluation

A major objective of the studies reported herein has been to define acceptable alternative systems and facilities for water supply and sewerage, and to present a basis for comparison of these alternatives in a manner which will provide guidelines for a comprehensive approach in initiating further individual projects within the County. Several factors which were considered in establishing the basis of the economic analyses used in these investigations are discussed in the succeeding few paragraphs, and the basis used is briefly presented following.

Because of the extensive size of the County, the diverse locations of the areas requiring supplemental water, the existence of major mountain ranges separating these areas, and the diversity in location of the potential sources of water supply, no single source of water can provide the most economic supply to every area of need. Similarly, because of these geographic factors, no single, generalized approach to the problem of wastewater disposal can be applied on a County-wide basis.

The San Luis Obispo County Flood Control and Water Conservation District serves as the manager of certain regional water supply projects in several instances, and might logically serve as the coordinator of a comprehensive County-wide water plan. Because of the broader tax base, the financing of local and regional water supply and sewerage facilities on a County-wide basis offers definite financial advantages. However, because of desires for greater local control or inherent regional differences, it does not necessarily follow that local projects should or will be financed in the future on a County-wide basis, or even on a uniform local basis since certain user areas are almost exclusively agricultural. The methods of repayment of project costs which have been used recently within the County are described in Chapter VII. It can be assumed with some confidence that the new projects proposed will be funded much in the same manner.

Certain of the individual water supply and wastewater facilities discussed herein have been built and costs therefore are being repaid. Nacimiento Reservoir and portions of the State Water Project are completed but the water from these sources has not been allocated to specific users. The repayment of funding for these projects is being carried on a County-wide tax base. It is also noted that several of the individual agencies supplying water within the County are empowered to, and from a practical point capable of, initiating some of the smaller local water conservation projects or wastewater treatment projects described herein. The repayment of costs for such local projects would most equitably be carried by the local users.

The economic evaluations which were conducted as part of the water project studies reported herein had two objectives. The first objective was to provide for comparison of capital requirements for alternative water supply and sewerage facilities. The second objective, with respect to the alternative water supply facilities considered, was to provide a factor for comparison of the net cost per unit of water delivered to users in each specific area considered. As a basis for comparison of costs to specific water users, equivalent unit water costs are presented which are applicable to individual service areas.

In the case of wastewater management programs, traditional economic analyses have been applied to each of the proposed projects, but the recommended program has been tempered to reflect prevailing water quality control regulations which have been adopted in order to preserve and, wherever possible, improve the environment, and thereby to achieve the highest possible sosial goals and objectives attainable through a water quality management program. Proper management of the County's water resources will require complete coordination of its water and sewerage programs.

DEMOGRAPHY

Future water supply and sewerage requirements are best estimated through the projection of anticipated urban, industrial, and agricultural developments. As a primary part of the investigation leading to this plan, estimates of the magnitude and location of future population growth and industrial and agricultural development were made. These projections are presented and briefly discussed in this chapter.

The projections of growth in population and land and water use presented herein for San Luis Obispo County were developed within the framework of projections of growth made for the State by the California Department of Finance. Planning work previously accomplished by agencies within the County and various cities and regional bodies was also utilized in this investigation with the intent of melding those individual efforts into an assemblage of consistent projections for each local and regional area in the County.

Population

Population growth in any specific area which is part of a larger socio-economic complex is influenced by many factors, both internal and external. The projections of County population presented herein are intended to be reasonable, conservative, and representative of a "normal" growth pattern, that is "normal" in the sense that the projected growth is consistent with past and anticipated future growth and economic development in California and the United States. It is recognized that either overestimation or underestimation of future populations could have serious consequences, resulting in unwarranted financial obligation for water development programs, or conversely, limiting economic growth through failure to provide an adequate water supply.

Since the boundaries for the County Census Divisions (the usual units for population projections by the County Planning Department) do not coincide with the boundaries of the Study Areas, approximations were made in an effort to correlate these boundaries. Major population centers were easily located within each Study Area, and consequently approximations were limited to areas of low population density. Table 1 indicates the projected County growth by Study Area and urban center. These estimates are the basis from which future water demands and sewerage requirements were determined.

It should be mentioned that the projections presented in Table 1 are in reality the median growth within an anticipated range of alternative growth prospects, and are expected to be more useful for planning when used for regional planning purposes. Actual growth which will occur in local areas will be directly related to the method by which local land use, lot split and subdivision ordinances are administered.

Irrigated Agriculture

Growth of irrigated agriculture in any area is a function of (1) the existence of suitable land, (2) suitable climatic conditions, (3) the availability of markets for crops produced, (4) the cost of available land and preparation thereof for irrigation, (5) the relationship between prices received for crops and cost of production, and (6) the availability and cost of an adequate supply of water of suitable quality. The absence of a favorable condition in any one of these factors may inhibit the development of irrigated land. During this investigation an evaluation was made of each of these factors with respect to present conditions in San Luis Obispo County. Present and projected irrigated crop acreages are shown in Table 2.

TABLE 1
PRESENT AND PROJECTED POPULATION FOR URBAN CENTERS
OF SAN LUIS OBISPO COUNTY

Study Area [1]	1970[2]	1972[3]	1980[4]	1990[4]	2000[4] LOW[5]	2000[4] MEAN	2000[4] HIGH[6]
North Coastal	2,100	-	4,190	7,420	9,280	12,100	14,905
Cambria	1,716	1,860	3,420	6,060	7,580	9,890	12,175
San Simeon	190	-	450	920	1,700	2,310	2,730
Central Coastal	13,100	-	19,090	27,820	30,805	40,150	49,470
Baywood-Los Osos	3,487	4,460	5,080	7,400	8,195	10,680	13,160
Cayucos	1,772	1,850	2,580	3,760	4,165	5,430	6,690
Morro Bay	7,109	7,720	10,360	15,100	16,730	21,790	26,860
Remainder					1,715	2,250	2,760
San Luis Obispo Bay	36,500	-	47,840	64,740	66,050	86,060	106,060
Avila Beach	400	410	520	710	715	940	1,145
San Luis Obispo City	28,036	31,200	36,750	49,730	50,730	66,100	81,465
Remainder					14,605	19,020	23,450
South Coastal	21,300	-	24,630	29,810	27,315	35,560	43,845
Pismo Beach	4,043	4,470	4,670	5,660	5,170	6,750	8,300
Arroyo Grande	7,454	8,100	8,620	10,430	9,585	12,440	15,395
Grover City	5,939	6,375	6,750	8,319	7,600	9,910	12,205
Oceano	2,564	2,810	2,960	3,590	3,280	4,280	5,270
Remainder					1,665	2,180	2,675
Nipomo Mesa	5,500	-	6,260	7,600	7,175	9,340	11,520
Nipomo	3,642	3,880	4,140	5,030	4,745	6,180	7,615
Remainder					2,430	3,160	3,905
Upper Salinas	25,700	-	29,210	32,420	27,335	35,620	43,900
San Miguel	808	808	920	1,020	865	1,020	1,390
Paso Robles	7,168	7,485	8,150	9,040	7,615	9,930	12,230
Templeton	743	805	840	940	780	1,030	1,255
Atascadero	10,290	10,960	11,690	12,980	10,950	14,260	17,580
Santa Margarita	726	770	820	910	765	1,000	1,235
Remainder					6,360	8,280	10,210
Cuyama-Carrizo Plain	1,500	-	1,780	2,190	2,040	2,670	3,275
Total County	105,700	112,200	133,000	172,000	170,000	221,500	273,000

NOTE: The population figures are for resident (night time) population levels and do not reflect the higher peak day-time populations of cities and urban areas which serve as retail, employment and trading centers and area-wide school service centers for larger geographic areas.

1/ Population figures for unincorporated community areas are for 1970 Census enumeration districts. Rural population figures are included in Study Area subtotals. Population figures for incorporated and unincorporated areas are not necessarily identical to existing or anticipated water and sewer service areas (refer to accompanying sketch).

2/ U.S. Census data.

3/ County Planning Department estimate as of July 1, 1972.

4/ Mean of high and low projection by CDM Inc. based on County Planning Dept. data.

5/ Low projection by CDM Inc. projected as 0.5 percent of projected State population.

6/ High projection by CDM Inc. projected as 3.22 percent equivalent uniform annual growth.

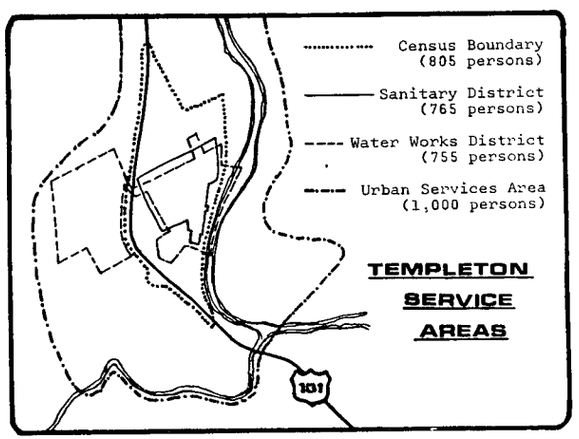


TABLE 2

PRESENT AND PROJECTED IRRIGATED CROP ACREAGES

Study Area	Year 1970	1980	1990	2000
North Coastal				
Alfalfa	250	290	320	360
Pasture	500	500	500	500
Citrus and subtropical	0	0	0	0
Truck crops	30	30	30	30
Field crops	250	280	310	340
Deciduous fruits and nuts	10	10	10	10
Small grains	10	10	10	10
Vineyards	0	0	0	0
Central Coastal				
Alfalfa	520	540	560	580
Pasture	1,270	1,350	1,430	1,500
Citrus and subtropical	30	450	850	860
Truck crops	830	830	830	830
Field crops	900	990	1,090	1,180
Deciduous fruits and nuts	50	70	100	120
Small grains	130	180	240	240
Vineyards	0	0	0	0
San Luis Obispo Bay				
Alfalfa	320	320	320	320
Pasture	840	900	970	1,040
Citrus and subtropical	20	360	680	680
Truck crops	210	210	210	210
Field crops	630	690	760	820
Deciduous fruits and nuts	30	50	70	90
Small grains	100	150	190	240
Vineyards	0	0	0	0
South Coastal				
Alfalfa	180	180	180	180
Pasture	390	400	410	420
Citrus and subtropical	150	200	250	300
Truck crops	2,110	2,110	2,110	2,110
Field crops	380	380	380	380
Deciduous fruits and nuts	180	170	160	150
Small grains	0	0	0	0
Vineyards	0	0	0	0
Nipomo Mesa				
Alfalfa	590	310	20	20
Pasture	500	290	80	40
Citrus and subtropical	450	2,100	3,500	3,500
Truck crops	4,620	4,810	5,000	5,190
Field crops	1,390	1,500	1,590	1,700
Deciduous fruits and nuts	70	110	150	190
Small grains	10	0	0	0
Vineyards	0	0	0	0
Upper Salinas				
Alfalfa	8,360	9,860	11,350	12,850
Pasture	5,210	6,170	7,120	8,080
Citrus and subtropical	0	0	0	0
Truck crops	420	420	420	420
Field crops	2,470	2,000	3,120	3,440
Deciduous fruits and nuts	260	400	550	690
Small grains	430	540	650	760
Vineyards 1/	30	60	80	100

TABLE 2
(cont)

Study Area	Year 1970	1980	1990	2000
Cuyama-Carrizo Plain				
Alfalfa	2,080	2,350	2,520	2,900
Pasture	290	280	270	250
Citrus and subtropical	10	10	10	10
Truck crops	150	150	150	150
Field crops	260	270	270	280
Deciduous fruits and nuts	80	140	210	280
Small grains	30	60	80	100
Vineyards	0	0	0	0

1/ Since 1969, the last year for which a complete land use survey of San Luis Obispo County is available, it is reported that in excess of 300 acres of irrigated wine grape vineyards have been established in the Upper Salinas Study Area. Projections appearing in this table were prepared prior to the public knowledge of such plans and are subject to continuing reevaluation.

EXISTING WATER SUPPLY FACILITIES

Existing water supplies for San Luis Obispo County include groundwater, Whale Rock Reservoir, Chorro Reservoir, Salinas Reservoir, and Lopez Reservoir. The County also has rights to water from Nacimiento Reservoir, but has not yet constructed facilities to divert this source. These sources and major transmission facilities are shown on Plate A.

Groundwater

Table 3 lists the total of safe yields of groundwater basins for each of the seven Study Areas. In some cases, viz, basins in Nipomo Mesa and South Coastal Study Areas, the safe yields shown are greater than the natural safe yields. In the Nipomo Mesa Study Area, 11,200 acre-feet of the safe yield shown are due to releases from Twitchell Reservoir. Groundwater supply in the South Coastal Study Area includes an increase of 1,700 acre-feet per year because of releases from Lopez Reservoir. In several areas of the County, present withdrawals from groundwater basins exceed the safe yield.

Whale Rock Reservoir

Located on Old Creek about one-half mile east of Cayucos, this reservoir has a total storage capacity of 40,000 acre-feet. When the reservoir was designed, its safe yield was estimated to be 8,900 acre-feet per year. Recent calculations indicate that the safe yield may be somewhat less than this value. Water rights presently apportioned on the basis of the original estimate of the safe yield are as follows:

City of San Luis Obispo	4,900 acre-feet
California State Polytechnic College	3,000 acre-feet
California Mens Colony	1,000 acre-feet

TABLE 3

ESTIMATED SAFE YIELD OF GROUNDWATER BASINS

Study Area	Estimated safe yield (acre-feet/year)
North Coastal	1,880
Central Coastal	6,920
San Luis Obispo Bay	2,250
South Coastal	10,200
Nipomo Mesa	31,700
Upper Salinas	47,300
Cuyama-Carrizo Plain	7,200

Salinas Reservoir

Salinas Reservoir is estimated to have a storage capacity of about 26,000 acre-feet and a safe yield of about 5,500 acre-feet per year. The project is operated by the San Luis Obispo County Flood Control and Water Conservation District under contract with the Federal Government. Water from the reservoir has been conveyed historically via pipeline to the City of San Luis Obispo and Camp San Luis Obispo. Releases can also be made directly to the Salinas River and to Santa Margarita.

Since the construction of the dam, most of the flow (excluding uncontrolled spillway overflow and releases between July 1 and November 1 required to meet vested rights) has been diverted to the City of San Luis Obispo. In some early years, releases to the Salinas River (excluding those specified for vested rights) were in the same order of magnitude as diversions to the City of San Luis Obispo, but in recent years, no stream release has occurred.

In 1972, the State Water Resources Control Board, by special order, modified and clarified existing permits for storage and diversion of Salinas River water. Permits were either extended or revoked, and the Board ordered that permittees should release water into the Salinas River channel in such amounts and at such times as will be sufficient, together with inflow with downstream tributary resources, to supply downstream diversions of any surface flow and groundwater extractions under prior vested rights. Until further order of the Board, it was conclusively presumed that prior vested downstream rights will be met if at all times either a visible surface flow exists in the Salinas River between the Salinas Reservoir and the confluence of the Nacimiento River, or the total inflow to the Salinas Reservoir is released therefrom into the channel of the Salinas River below the Salinas Dam. The Board also instructed the release of 1,000 acre-feet of water before August 1, 1972. The State Board, after reconsidering the matter, adopted the above on October 5, 1972.

Lopez Reservoir

Lopez Dam and Reservoir were constructed to provide recreation, flood control, regulated release for recharge of the Arroyo Grande Basin, and a supplemental water supply for the Cities of Arroyo Grande, Grover City and Pismo Beach, and the unincorporated communities of Oceano and Avila Beach. The reservoir provides a 51,800 acre-foot storage volume and a project yield of 6,230 acre-feet per year. About 4,530 acre-feet per year of this yield are available to the water supply contractors and the remainder is accounted for by the increase in groundwater recharge afforded by the project.

Alternative Facilities for Supplemental Water Supplies

California State Water Project

The Coastal Branch of the California Aqueduct, of primary interest to San Luis Obispo and Santa Barbara Counties, will follow the approximate alignment shown on Plates 1 and 7. The project facilities required to deliver water to the site of the Devil's Den Pumping Plant in Kern County were operational as of the end of 1970.

Under the terms of the contracts between the California State Department of Water Resources and the San Luis Obispo and Santa Barbara County Flood Control and Water Conservation Districts, San Luis Obispo County will ultimately be entitled to 25,000 acre-feet of water. The State's contract with San Luis Obispo County provides for the ultimate delivery of State Project Water in the quantities indicated at three locations, as follows:

San Luis Obispo Power Plant	10,000 AF/year
Arroyo Grande Turnout	5,000 AF/year
Santa Maria Terminus	10,000 AF/year
TOTAL	25,000 AF/year

Additional or alternative points of delivery could be constructed along the route of the aqueduct to meet other demands provided that the San Luis Obispo County Flood Control and Water Conservation District bears the cost of these facilities.

Nacimiento Dam and Reservoir

The San Luis Obispo County Flood Control and Water Conservation District entered into an agreement in 1959 with the Monterey County Flood Control and Water Conservation District under which San Luis Obispo County made a commitment to participate in repayment of the cost of San Antonio Dam and Reservoir for which the County would be entitled to divert stated amounts of water from Nacimiento Reservoir. Nacimiento Reservoir is owned and operated by the Monterey County Agency, but is situated in northern San Luis Obispo County.

The agreement between the two agencies specifies that San Luis Obispo County is entitled to, and must pay for, up to 17,500 acre-feet of water per year starting nine years following the completion date of San Antonio Reservoir, also owned by Monterey County. This water

may be used any place in San Luis Obispo County under terms of the contract and the water rights permit issued for the project. During the first eight years following completion, San Luis Obispo County may purchase lesser amounts than its maximum entitlement, but a minimum commitment for these years is established. San Antonio Reservoir was completed in 1965, and payments by San Luis Obispo County began in 1966. While no water has been exported thus far due to the absence of diversion works at Nacimiento Dam, downstream releases have been made to enhance the use of Nacimiento River as a trout fishery. A contract has also been awarded for the use of a small portion of the entitlement on the north shore of the reservoir.

The agreement between the two agencies also sets forth a formula for computing the costs to San Luis Obispo County for water from Nacimiento Reservoir. In this formula, costs of water comprise a construction cost rate and a maintenance and operation rate. The construction cost component, which continues for 40 years, is fixed by the actual construction cost of San Antonio Dam and Reservoir, the estimated safe seasonal yield of that reservoir, and its conservation capacity. The maintenance and operation rate varies from year to year depending upon the actual maintenance and operation cost for the previous year. Currently, the construction cost component is approximately $9.000 per acre-foot, and the maintenance and operation component is $0.70 per acre-foot. Both values are subject to possible adjustment following completion of audits.

Whale Rock Reservoir Space

Several of the alternative water systems evaluated in the study leading to the recommended plan contemplated the regulation of imported supplies in Whale Rock Reservoir. As discussed earlier in this chapter, there are indications that the safe yield of Whale Rock Reservoir and the Old Creek drainage basin might be considerably less than initially estimated. Investigations have shown that space in the reservoir can be used for regulation of additional supplies without significant impairment of the ability of the reservoir to conserve the full yield of the drainage basin.

Considering the cyclic nature of annual municipal and industrial, and agricultural water demands, the terminal reservoir capacity required at the end of an aqueduct supplying a uniform inflow is approximately one qyarter of the amount of the total annual use. It is estimated that 1,000 acre-feet of capacity in Whale Rock Reservoir can regulate uniform aqueduct inflows to supply 4,000 acre-feet of demand per year. The estimated maximum annual demand for supplemental water in the North and Central Coastal Study Areas of 11,600 acre-feet per year could be regulated by the use of approximately 3,000 acre-feet of storage capacity in Whale Rock Reservoir. The constructing agency could perhaps acquire rights to use up to 3,000 acre-feet, or about 7.5 percent of the total storage capacity from the owners of Whale Rock Reservoir. The cost of such capacity would be subject to terms and conditions to be negotiated with the project owners. For the purpose of economic analysis presented in this report, however, it has been assumed that the price would be equal to the actual costs incurred by the project owners.

Desalination Processes

On January 12, 1971 the California Department of Water Resources announced the selection of the Diablo Canyon site in San Luis Obispo County for consideration in a feasibility study, to be made in cooperation with the Federal Office of Saline Water, on a large-scale desalination plant. The plant would operate in conjunction with the nuclear fuel power plant at Diablo Canyon now under construction by Pacific Gas and Electric Company. The feasibility report, recently completed by the two agencies, recommends that the State Legislature and the United States Congress consider authorization and

appropriations to design, construct, and operate the large-scale desalting plant. As planned, the plant would be constructed to a capacity of about 35,000 acre-feet per year. The actual design is scheduled to begin early in 1973, with construction in mid-1975, and active operation in 1978. No allocation of the potential yield of the plant among potential local contracting agencies has been made as yet.

Deliveries would be made through a pipeline shown on Plate 7, which is tentatively planned to be constructed from the desalination plant to the vicinity of San Luis Obispo, from whence water would be transported by means of the Coastal Aqueduct or other conveyance facility to the Santa Maria Terminus. Partial regulation of water deliveries to San Luis Obispo County would be provided by utilization of a portion of the Whale Rock Reservoir capacity.

Although the actual unit cost of producing demineralized water is currently about $300 per acre-foot, State of California representatives have indicated that the water would be marketed for a limited period of at least 10 years at a subsidized price. The extent of the subsidy, as well as the period of availability of the desalinized water, will be prime factors in evaluating the benefits from the program for San Luis Obispo County. It is estimated that by 1980, desalination plants of 45 million gallons per day capacity will be producing fresh water at a cost of approximately $175 per acre-foot. Although this cost is still about $100 per acre-foot higher than State Water Project unit costs, subsidies by State and Federal governments could make desalted water competitive with local supplies during the contemplated life of the project. A recommendation for authorization of this project by the Congress and the State Legislature has not been made.

Local Conservation Projects

In the investigations leading to publication of State Water Resources Board Bulletin No. 18 in May, 1958, and in numerous subsequent studies, consideration has been given to potential surface storage developments in San Luis Obispo County. These studies have provided estimates of the amounts of supplemental water that could be developed at the sites considered, evaluated the suitability of the dam sites, and provided estimates of capital and annual costs.

There are about 60 potential dam and reservoir sites in San Luis Obispo County, of which about seven could reasonably serve to augment water supplies. Data for these seven are listed in Table 4.

TABLE 4

POTENTIAL SURFACE STORAGE FACILITIES
IN SAN LUIS OBISPO COUNTY

Dam and Reservoir	Stream	Gross storage (AF)	Annual safe yield (AF/yr)
Bald Top	San Carpoforo	20,000	10,400
Upper Ragged Point	San Carpoforo	30,000	17,500
Yellow Hill	Arroyo de la Cruz	20,000	13,100
		50,000	22,900
		80,000	27,300
San Simeon	San Simeon	60,000	18,200
Santa Rosa	Santa Rosa	14,000	7,300
		25,000	9,200
		35,000	11,000
Lower Jack	Jack	14,000	3,400
		25,000	4,600
		28,000	6,200
Santa Rita	Santa Rita	10,000	2,700
		15,000	3,000
		23,500	6,000

THE RECOMMENDED WATER PLAN

In the development of the recommended comprehensive water plan, a total of 12 potential schemes involving existing and alternative water supply facilities were evaluated. Each scheme offered advantages to particular service areas, but no single new supply source would be adequate to meet all County-wide needs. It was found instead that development of water from Nacimiento Reservoir and from the State Water Project would be the most feasible combination. Four alternatives involving these sources were evaluated to select the plan discussed in this section.

The recommended water plan shown in Plate A includes the use of existing, as well as future, facilities. Plate A shows the capacities, sizes and construction schedules for each of the proposed facilities comprising the recommended plan as well as other potentially required developments. As noted in the recommendations, the exact size, location, timing of construction, and service area of facilities comprising the recommended plan are subject to the results of the proposed contracting program.

In the proposed plan, water from Nacimiento Reservoir would be piped to Jack Creek and Old Creek for release in the stream beds. The discharge at Jack Creek would provide recharge along Jack Creek, Paso Robles Creek and the Salinas River and would serve Templeton, Paso Robles and San Miguel. The discharge to Old Creek would enter Whale Rock Reservoir for regulatory purposes. A pumping station at Nacimiento Reservoir and a pipeline capable of delivering water both to Jack Creek and to Old Creek would be providedd.

Required pumping plants, storage facilities and pipelines would be constructed near Whale Rock Reservoir. One set of facilities would serve Cambria and San Simeon. The other set would serve the Morro Bay areas and Baywood Park-Los Osos. Existing facilities would also be used to deliver water from Whale Rock Reservoir to the San Luis Obispo area.

The recommended plan further calls for release of contract entitlements from Salinas Reservoir and/or State Water Project into a pipeline to Atascadero. Part of this pipeline, to Santa Margarita, already exists and the line would be extended to Atascadero. The pipeline could be extended to Templeton or Paso Robles in the future if desired, and larger quantities of water could be delivered to all of the communities along the Salinas River, if desired, based on the results of actual contract negotiations.

Water from the State Water Project would be used to augment supplies in the Upper Salinas, San Luis Obispo Bay, and South Coastal Study Areas.

Retention of the present entitlement is recommended because of prospective needs for irrigation water supplies and for possible urban growth in excess of the rates estimated in the report. Also, it is unlikely that supplemental water supplies can be made in the projected service areas of the project beyond the year 2000, at a cost competitive with that of water from the State Water Project.

The scheduling, size, capacity, and construction costs for proposed facilities comprising the recommended master water plan are shown in Table 5.

TABLE 5

ESTIMATED CAPITAL COSTS OF FACILITIES REQUIRED
TO IMPLEMENT THE RECOMMENDED WATER PLAN

Description of Facility	Construction Date 1/	Capacity	Capital Cost
Pumping Plants			
Nacimiento Reservoir	1975	20.7 cfs	$ 479,000
Whale Rock-North Coast	1975	3.7 cfs	58,910
Whale Rock-Central Coast	1975	9.0 cfs	34,250
Pipelines			
Nacimiento-Jack Creek 30"	1975	42,240 feet	2,549,280
Jack Creek-Old Creek 27"	1975	66,000 feet	1,521,550
Whale Rock-Cambria 14"	1975	82,500 feet	919,050
Cambria-San Simeon 12"	1980	47,520 feet	393,940
Whale Rock-Morro Bay 21"	1975	31,680 feet	559,150
Salinas Reservoir - Atascadero 12"	1975	52,270 feet	433,320
Storage Facilities			
Whale Rock-North Coast	1975	1.2 mg	124,000
Whale Rock-Central Coast	1975	2.9 mg	304,000
California State Water Project	1980	15,000 AF/yr	10,926,030
		TOTAL	$18,302,480

Note: Construction costs shown are based on ENR Construction Cost Index of 1640 and include an allowance of 25 percent for engineering and contingencies.

1/ Subject to execution of water supply contracts by potential users.

THE RECOMMENDED SEWERAGE PLAN

Proposed plans and programs for construction of sewerage facilities are presented in this section. The goal of the plan is to meet insofar as practicable the federal and state water quality standards and objectives. In effect, the water quality objectives seek to encourage the reuse of wastewater effluents to the maximum extent possible and to cease discharges to the ocean and to surface streams. These objectives will require development of new beneficial uses for the reclaimed water in some areas, especially when considering future increases in sewage flows, all ultimately will reduce the need, in part, for imported water supplies. Principal features of the Sewerage Plan are depicted on Plate B.

The San Simeon area has limited areas that could serve for year-round reuse of wastewater effluent. Accordingly, this area may eventually have to transport its wastes to the Cambria plant for treatment and reuse. In the interim, local sites for summer reuse of effluent for irrigation should be investigated. Effluent from San Simeon presently is discharged into the ocean through an outfall after secondary treatment.

The Cambria Wastewater Treatment Plant, now nearing completion, will dispose of its secondary effluent by means of spray irrigation at the plant site. As flows into the plant increase, supplementary treatment units will be required and the plant site will become inadequate for disposal of the effluent. When this condition occurs, a new site for effluent disposal will be necessary. Potential sites for the groundwater recharge purposes exist near Perry Creek and along Santa Rosa Creek. Other beneficial uses in the Cambria area are expected to develop, including golf-course irrigation. Wastewaters from San Simeon will ultimately be treated and reclaimed at the Cambria plant.

Effluent from the Morro Bay Wastewater Treatment Facility (which also serves Cayucos) is now discharged to the ocean after secondary treatment. To terminate or at least reduce this discharge, reclamation of water will be required. Possible uses of reclaimed wastewater are irrigation of public areas, golf courses, and possible future crops in the area. If all the effluent is to be reclaimed, then a site for groundwater recharge will be necessary because of limited demand for irrigation water in wet weather, or storage sites will need to be found to impound wastes during wet weather. A potential site for groundwater recharge is located near Morro Creek. Use of this site would augment the yield of downstream wells and make water available for crops that may be grown nearby in the future. Other beneficial uses will probably be developed in the future.

As in other areas, sites for possible reuse of effluent near Morro Bay will not be centralized but rather will be distributed over the area. Therefore, the treatment facilities for the Baywood-Los Osos area should be separate from those for Morro Bay. A logical site for treatment and land disposal would be near Warden Lake. Because the Baywood-Los Osos area is presently unsewered, the construction program will include collection and interceptor sewers, in addition to the treatment facilities.

The City of San Luis Obispo has several potential uses for reclaimed water, including:

1. Direct groundwater recharge;
2. Irrigation of crops near the San Luis Obispo Treatment Plant, in the Edna area, in the Los Osos Valley and in Chorro Valley;
3. Irrigation of public parks near Laguna Lake and in other areas;

4. Recharging of Laguna Lake;
5. Maintaining a base flow in San Luis Obispo Creek for a year-round fishery;
6. Industrial reuse.

It appears that a combination of these disposal methods and sites will be required. Consequently, not all wastes will need to be treated to the same degree. Moreover, some sites may require large amounts of water, while others may require only small amounts. A study program is required to determine the facilities required to maximize wastewater reuse and potential places and means of reuse. It is anticipated that wastewaters from a recently proposed sewerage system to serve an urbanized area in the vicinity of the San Luis Obispo Country Club, southeast of the City, will initially be disposed on land until such time as beneficial uses can be identified.

The Avila Sanitary District now provides primary treatment to wastes before the effluent is discharged through the District outfall. When the outfall is eventually abandoned, the District will have to provide at least secondary treatment before the wastes can be reused. In such a case, the effluent could possibly be pumped to the San Luis Bay Properties Treatment Plant for disposal with effluent from San Luis Bay Properties. This alternative would require addition of secondary treatment if the effluent is used for groundwater recharge and perhaps additional treatment if the effluent is used for golf-course irrigation. A pumping station and force main would also be required.

It is expected that the treatment plan and outfall serving Pismo Beach will be adequate until about the year 2000. The outfall at the South San Luis Obispo County Sanitation District Treatment Plant will likewise be adequate until that date, but the District plant will need expansion in about 1985. Areas near Price Canyon close to the Pismo Beach plant may be adequate for groundwater recharge and other beneficial uses may develop in the Pismo Beach area.

There are several potential methods for wastewater reuse in the South San Luis Obispo County Sanitation District area, which presently serves Oceano, Grover City, and Arroyo Grande. These potential uses include:

1. Groundwater recharge in the area of Arroyo Grande Creek and its tributary, the Los Berros Creek;
2. Irrigation of vegetation to stabilize the sand dunes in and south of Pismo Beach State Park;
3. Irrigation and/or groundwater recharge in Nipomo Mesa, Nipomo Valley and Santa Maria Valley.

The best site for reuse over the entire year appears to be in the Nipomo Mesa area. Recharge in the Arroyo Grande Creek watershed would probably require removal of nitrogen before discharge, because of the high nitrate content of the underlying groundwater basin.

Nipomo does not have a community sewerage system at present, but will require such facilities in the future. A collection system and an interceptor terminating south of the community near Nipomo Creek will be required. Disposal should be mainly through groundwater recharge, although a potential demand for irrigation water supplies may develop.

Neither Santa Margarita nor Garden Farms presently have community sewerage facilities. When such facilities are developed, it will be more economical for the communities to join in constructing a single plant rather than construction of separate plants.

At Atascadero, secondary effluent is disposed of by means of percolation ponds at the plant site. New percolation ponds will soon be needed, but the present plant will be adequate until about 1980.

Templeton is planning to construct interceptor facilities to transport its wastes to the Paso Robles plant where the wastes will receive secondary treatment and treatment in oxidation ponds before spreading. It is expected that the Paso Robles plant will be adequate to serve both communities for close to 20 years.

San Miguel is planning to construct a new treatment plant consisting of aerated lagoons and intermittent sand filters to replace the existing plant. When constructed, the plant will be adequate for about 20 years.

The cost of providing a single sewerage system to serve the Nacimiento Reservoir area is exceedingly high. Consequently, separate plants may be required initially, which would ultimately be phased into a regional system.

At some time in the future, Shandon may require a sewerage system to replace the private septic tanks and leaching fields. Treatment in aerated lagoons and disposal in evaporation-percolation ponds has been proposed. Because the community requires both a water and a sewerage system, it will be prudent for the water system to be installed initially, followed by the sewerage system as early as the financial resources of the community permit.

IMPLEMENTATION OF THE PLAN

Implementation of the comprehensive water and sewerage plans recommended herein will require careful consideration of many legal, financial, organization, and environmental factors before any of the specific projects can be brought to the point of readiness for local consideration by the beneficiaries and by the appropriate Federal and State agencies which may be asked to assist with project funding. Selected aspects of those factors are discussed briefly in this section.

Programs for Financing Water and Sewerage Facilities

A wide variety of local and outside funding sources have heretofore been employed to finance major improvements of the type and scope contemplated herein. Recent changes in grant and loan legislation and fluctuations in the municipal bond market have emphasized the importance of selecting the best method or combination of methods for financing a project. Comments on the rationale for some of the current financing policies employed in San Luis Obispo County and assumptions as to future funding sources are therefore included.

Sources of Local Funding

Whenever possible, local agencies have attempted to secure the maximum possible assistance through grants from Federal and State financial assistance programs. Notwithstanding the high level of success in these endeavors, the agencies have also funded a significant portion of the cost of a number of projects from local resources through the issuance of general obligation, revenue and assessment bonds. Pay-as-you-go financing has also been employed in selected cases where the tax base has kept pace with capital outlay requirements.

General Obligation Bonds - General obligation bonds have generally been employed to finance capital improvements of agency-wide benefit where the magnitude of the funding requirement has been clearly beyond the available funding from system revenues, or where the interest rate or other repayment features for that type of bond were clearly more favorable than for any other type of bond financing.

Revenue Bonds - Except in special circumstances, revenue bond financing has not been attractive in San Luis Obispo County in recent years due to relatively high interest rates, discounts, and reserve requirements as compared with general obligation bond financing. When used, this type of financing has generally been limited to water distribution or sewerage collection systems or other revenue-providing facilities.

Assessment Bonds - Assessment bond proceedings have been employed in those instances where a tangible, yet variable, benefit can be assigned to various parcels of land within an area of benefit from a particular project, and where it is felt that added cost of administration of this type of proceeding can be justified on grounds of greater equity in cost apportionment. Several types of assessment bond proceedings have been employed in San Luis Obispo County for the financing of water distribution systems and sewerage collection systems, where it has been felt that a proration of the system cost on the basis of front footage, land area, or some combination of these or other benefit units was most equitable.

Financial Assistance Programs

Most of the projects discussed herein are eligible for loans and grants under one or more Federal and State financial assistance programs. A few of these programs having special application to San Luis Obispo County, and for which varying prospects for funding can be expected, are discussed in this section.

Public Law 84-660 - The Federal Water Pollution Control Act, as amended, provides grants for sewage treatment works, interceptors, outfalls and pumping stations and their appurtenances for single and joint projects. The maximum amount authorized by Federal grants is 75 percent of the eligible facilities. State grant funds are also available to supplement this program.

Public Law 89-117 - The Housing and Urban Development Act of 1965 is available to encourage local agencies to construct adequate basic water and sewerage works in order to promote their efficient and orderly growth. It provides grants to local public bodies and agencies to finance specific projects for water works and basic sewer facilities other than sewage treatment plants and interceptors for which grants are available under PL 84-660. No grants are made for a sewage facility until treatment works have been provided. The amount of any grant will not exceed 50 percent of the eligible portion of the development cost of a basic water of sewer facility, but under certain conditions enumerated in the Act, the amount may be increased for a basic public sewer facility to not more than 90 percent of the eligible cost. No grant for either water or sewer facilities will be made unless the Secretary of Housing and Urban Development determines that the project is necessary for the improvement of health and living standards of the people in the community and that the project meets the criteria established by the Department requiring an area-wide water or sewerage facilities system as part of the comprehensively planned development of the area. It is expected that this program will beaffected by the new revenue sharing program adopted by the Congress.

Public Law 84-345 - Title II of the Public Facility Loans Program, as amended by the Housing Act of 1961 (PL 87-70) is available to assist non-Federal agencies to finance certain needed public works through long-term loans, when such loans are not otherwise available on reasonable terms and conditions.

Only public agencies having a 1960 census population of less than 50,000 are eligible under this program, and no grants or subsidies are involved. Applicants are expected to participate in the cost of the proposed projects to the extent possible. Accordingly, this program would not cover the financing of facilities eligible under PL 84-660, or facilities which would otherwise be financed with local bond issues.

Public Law 89-240 - The Farmers Home Administration, United States Department of Agriculture, assists public and quasi-public bodies and non-profit corporations under the Consolidated Farmers Home Administration Act of 1961, as amended, with loans and grants for the installation, repair, improvement and expansion of water and waste disposal systems including collection and treatment of wastes.

The Act requires that the funds be used for the benefit of residents of open country and rural towns and villages of not over 5,500 population. Accordingly, several communities in San Luis Obispo County are eligible for this program.

Public Law 84-984 - The Bureau of Reclamation, United States Department of the Interior, makes loans and/or grants available to irrigation districts and other local agencies under the Small Reclamation Projects Act of 1956, as amended, for projects primarily for the development of irrigation water supplies, although

other project purposes may be included. This program is felt to be particularly adaptable for assistance in the development of irrigation systems for new citrus, avocados and wine grape acreages in San Luis Obispo County.

Public Law 88-140 - Referred to as the Act of October 16, 1963, this program may be combined with any one of several Army Corps of Engineers or Bureau of Reclamation flood control and conservation programs to permit local agencies to develop water supplies for domestic and municipal water use in conjunction with a Federal reservoir project on a deferred payment basis.

Public Law 88-578 - The Federal Land and Water Conservation Fund Act has been used in the case of the Lopez Project to finance on-shore recreational facilities. The total funding available under this program is limited and a great deal of competition exists each year in determining the allocation of funds between State and local projects. The program can be used to finance on-shore recreational facilities at any of the reservoir projects discussed herein.

David-Grunksy Act, California Water Code Section 12880 et. seq. - The California Department of Water Resources has, until recently, made grants available under this Act to local agencies for portions of the construction cost of a project allocated to recreation and fish and wildlife enhancement, and for the construction cost of certain initial on-shore recreational facilities. In addition, the Department is authorized to make loans repayable over periods of up to 50 years, with development periods of up to 10 additional years, for water supply development and distribution systems. New regulations under this program generally limit its application to the solution of problems involving public health hazards, and the loan aspects of the program are greatly emphasized over grants.

California Harbors and Navigation Code Sections 7.14 and 395.1 - The California Department of Navigation and Ocean Development makes loans for the planning, acquisition, construction, improvement, maintenance, or operation of boat launching and related facilities in connection with recreational developments at reservoirs under this program.

Wildlife Conservation Law of 1947, California Fish and Game Code, Sections 1300, et. seq. - The Wildlife Conservation Board of the California Department of Fish and Game administers this grant program for assistance to local agencies in preservation, protection and restoration of wildlife and for the providing of associated recreational facilities at reservoirs, including restrooms, parking lots, access roads, and launching ramps. Important fishing access features at Salinas Reservoir have been constructed under this program.

County-wide Coordination

It has been shown that the greatest economies of scale can be achieved in implementation of the comprehensive water plan recommended.

The San Luis Obispo County Flood Control and Water Conservation District has already taken significant steps toward implementation of a truly County-wide water program. Important water rights permits have been acquired and water supplies of great future economic significance have been reserved for use in San Luis Obispo County through negotiated contracts. The District has also demonstrated its capability for planning, constructing, and operating large and complicated regional water resource development projects. Accordingly, it appears that this agency is the logical one to continue the program already started and envisioned herein.

County-wide coordination and implementation of the water development program is imperative if the entire County is to be assured of the continuing availability of the most economical water supplies which can be developed. For many agencies and communities, their financial resources are totally inadequate to independently manage a water importation program.

Because the Nacimiento River and State Water Project sources are of even greater scale than either the Whale Rock or Lopez Projects, consideration should be given to establishing even larger zones of benefit, wherein those who actually receive the benefit from project water supplies will provide the local funds necessary to finance the project, but where any bonds which would be required would be secured by the tax resources of the entire County.

With respect to sewerage development, it has also been demonstrated that coordination and implementation on a regional basis can be of significant financial benefit to local communities, whether the facilities serve individual communities, or whether the communities join together in constructing a large integrated regional collection system with a single treatment and disposal system.

Because of their broad power and financial flexibility, County Sanitation Districts have proven to be particularly successful as administrative bodies in California. The South San Luis Obispo County Sanitation District Program, though only of recent origin, is an example of this approach. Even more recently developed, the program of the Atascadero County Sanitation District is achieving success. County service areas and community service districts are also being effectively utilized.

Because of the magnitude of some of the sewerage projects and the necessity in some cases for immediate and concerted action, it will probably be in the best interest of all concerned for the regional programs to be implemented under a single management if maximum efficiency and minimum cost of administration are to be achieved. For these reasons, it is believed that a single-agency approach, such as through a County Sanitation District, will prove most economical in San Luis Obispo County. Where other municipal services are to be provided, the use of incorporated cities, county service areas, or community service districts should be used.

Monitoring the Plan

The sizing and scheduling of water and sewerage facility needs, which form the basis of the comprehensive water and sewer plan reported herein, are, of necessity, based on population, water-use, and wastewater-flow projections. These projections were developed from the best data available.

Nevertheless, because growth in localized areas is so difficult to predict, there may be deviations between rates predicted in this report and those actually occurring in the future, so that new capacity estimates and construction schedules may be required from time to time. It is therefore recommended that revisions be made to update the water and sewerage plan at least every five years, or prior to initiating construction of major components of this plan.

Environmental Considerations

The consequence of environmental damage must be considered in the early stages of any project, and to the extent that measures for the prevention, mitigation or reparation of environmental damage can be identified, these measures should be included as a part of the project plan. To the extent that the costs of such prevention, mitigation, or reparation measures can be assessed, these costs should be included in the economic justification and economic feasibility analyses. Moreover, recent legislation at both the Federal and State levels requires that,

for any project requiring State or local agency approval or involving the allocation of State or Federal funds for property acquisition or construction, a statement including discussion of the impact of the project on the environment is to be prepared for and consdered by the responsible State or local agency.

The individual projects which are developed in implementing this plan will generally include the above-mentioned environmental impact considerations. Once completed and in operation, the effect these projects have on the environment will be monitored on a broad scale by the Regional Water Quality Control Board, and others having appropriate jurisdiction over the particular project or facility.

Considerations During Design and Construction

General problems will arise as a result of construction of access roads, and the water and sewer facilities themselves. Such damage could include soil erosion, tree and brush clearance, view obstruction, and beach impairment. Operation of reservoirs to meet water demands creates a margin of shoreline subject to varying water levels and possible erosion downstream. These problems can be diminished by careful road design and construction standards, seeding, controlled stream releases, and general care in the siting of facilities. Adequate regulations are contained in the State Codes to protect fish and wildlife resources in connection with construction activities along streams and rivers.

Important to the North Coastal Study area, is the preservation of scenic attractiveness in the bays, and restrictions on disturbance of trees and natural hillsides. Existing water and sewerage systems have had very little effect on the aesthetic values, and with proper care in design and construction, the planned facilities can be made compatible with the natural surroundings.

The Central Coastal Study Area water and sewer lines are proposed to be constructed generally beneath existing roads. Water will be imported or reclaimed, thereby preserving existing water courses in their natural state. Overall, little, if any, environmental damage is anticipated.

The South Coastal Study Area is already extensively populated, the sewer and water lines are already placed. Future additions are not contemplated to pose any environmental problems. Neither will the additions contemplated for the Nipomo Study Area pose any significant environmental problems.

It is necessary that funding and actual construction of each project involving Federal or State funds be preceeded by an environmental impact report, and it is likewise necessary to observe and systematically record the identifiable environmental effects of water and wastewater management projects in order that proper control can be exercised and adverse effects mitigated. With care in planning, little environmental damage is anticipated to result from the implementation of this plan. The benefits of water supply, flood control, groundwater protection, and recreation are expected to more than mitigate the unavoidable consequences. In those cases where facilities will reduce flooding or provide water for groundwater recharge, the projects will substantially reduce the adverse impact of some of the present natural and man-made environmental phenomena. When recreation can be provided in connection with a planned reservoir, the opportunity for substantial enhancement of the fishery resource will exist.

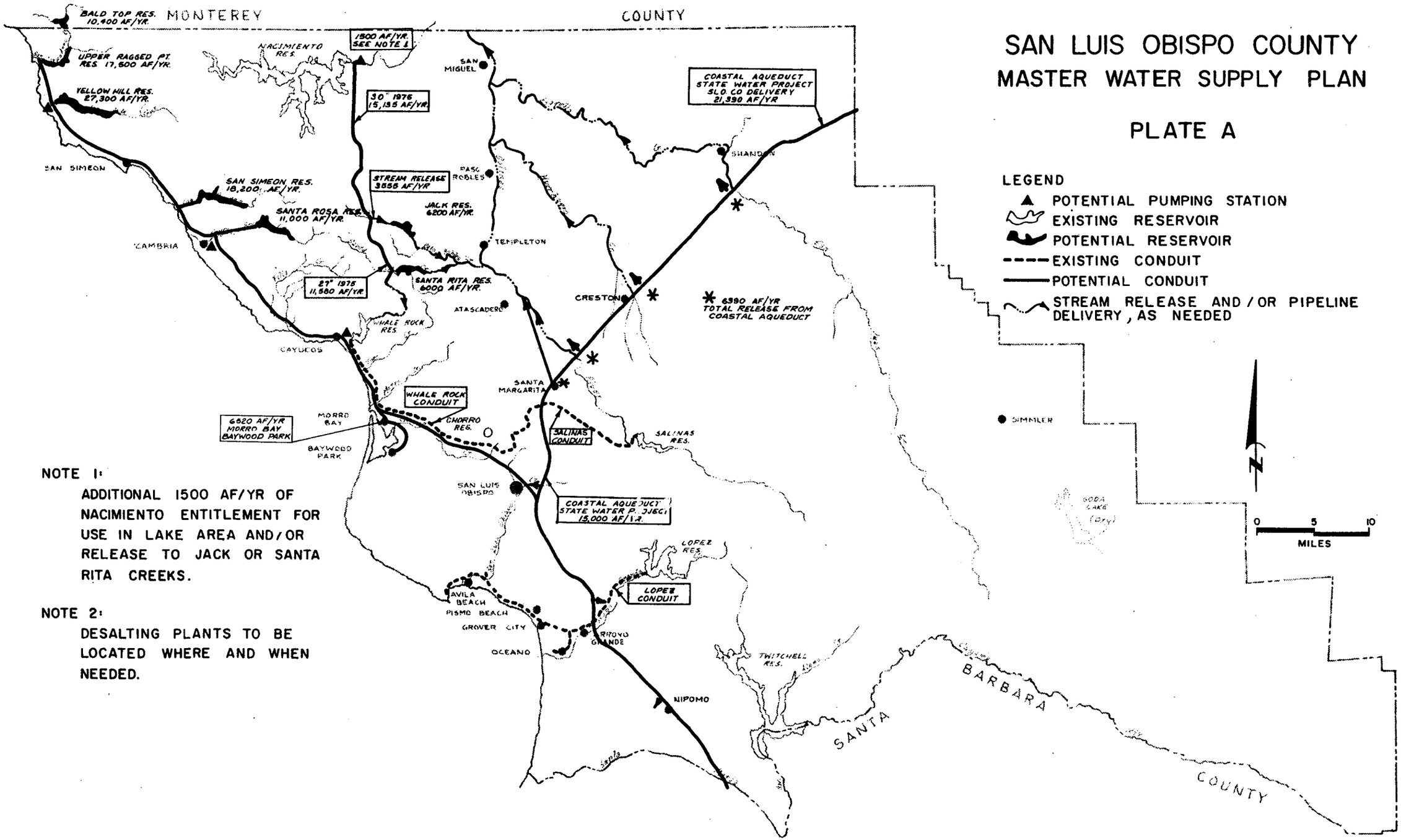
Water Pricing Policy

The water development plans discussed herein contemplate the development of water supply contracts which will reflect the policy of the Board of Supervisors regarding the equitable apportionment of the cost of facilities among the contracting parties.

In the case of the State Water Project, the existing contract between the State of California and the San Luis Obispo County Flood Control and Water Conservation District provides for the purchase of water surplus to the needs of the other contracting agencies on a year to year basis. Under the State's pricing policy, such water will be available on a unit cost basis, generally reflecting the operation and maintenance costs to the State. While the competition for such surplus waters is keen, the program does offer the water users of the Upper Salinas Area an opportunity to reduce the overdraft on their groundwater supply at a substantially reduced price below the level presently anticipated for firm contracted supplies.

This reduced price, when combined with the cost of pumping present groundwater supplies, would produce an overall weighted water cost within the repayment capacity of many of the present urban and agricultural groundwater users.

In addition, a special pricing policy should be considered for surplus water which may be available in future years from San luis Obispo County's Nacimiento Reservoir entitlement in order to encourage use of this water within the County. Such use could occur by releasing surplus water into Jack Creek and/or Santa Rita Creek for ground replenishment and/or by delivering to Whale Rock Reservoir when excess storage was available. Use of surplus water in this County is desirable inasmuch as the Nacimiento entitlement cannot be accumulated. However, the overall pricing policy shall encourage the maximization of project entitlement in order to insure equity in the allocation of project costs among project beneficiaries.



SAN LUIS OBISPO COUNTY
MASTER WATER SUPPLY PLAN

PLATE A

LEGEND

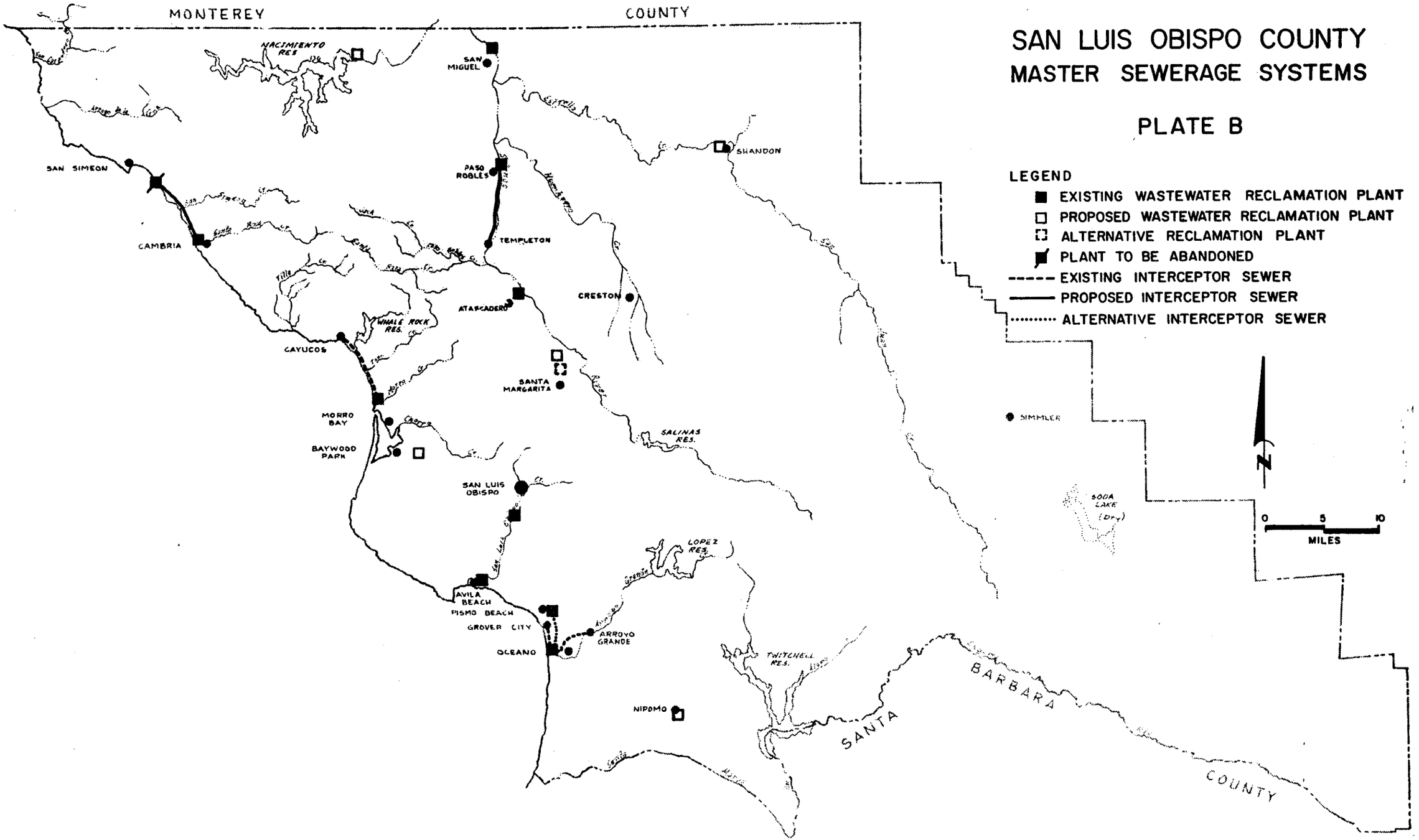
- ▲ POTENTIAL PUMPING STATION
- EXISTING RESERVOIR
- POTENTIAL RESERVOIR
- ---- EXISTING CONDUIT
- ——— POTENTIAL CONDUIT
- STREAM RELEASE AND/OR PIPELINE DELIVERY, AS NEEDED

NOTE 1:

ADDITIONAL 1500 AF/YR OF NACIMIENTO ENTITLEMENT FOR USE IN LAKE AREA AND/OR RELEASE TO JACK OR SANTA RITA CREEKS.

NOTE 2:

DESALTING PLANTS TO BE LOCATED WHERE AND WHEN NEEDED.



SAN LUIS OBISPO COUNTY
MASTER SEWERAGE SYSTEMS

PLATE B

LEGEND

- EXISTING WASTEWATER RECLAMATION PLANT
- PROPOSED WASTEWATER RECLAMATION PLANT
- ALTERNATIVE RECLAMATION PLANT
- PLANT TO BE ABANDONED
- EXISTING INTERCEPTOR SEWER
- PROPOSED INTERCEPTOR SEWER
- ALTERNATIVE INTERCEPTOR SEWER

PLATE 6A

NORTH COASTAL STUDY AREA

MAJOR WATER AND WASTEWATER FACILITIES

LEGEND

	EXISTING	PROPOSED INITIAL	PROPOSED ULTIMATE
WATER FACILITIES			
TRANSMISSION LINES			
WELLS			
STORAGE TANKS			
TRANSMISSION LINE DIAMETER IN INCHES			
INSTALLED WELL CAPACITY IN MGD			
STORAGE TANK CAPACITY IN MILLION GALLONS			
SERVICE AREA			
WASTEWATER FACILITIES			
PUMP STATION			
PIPELINE DIAMETER IN INCHES OVER CAPACITY IN MGD			
FORCE MAIN DIAMETER IN INCHES			
INTERCEPTORS			
PUMP STATION CAPACITY IN MGD			
SERVICE AREA			

AGENCY	BOUNDARIES	INDEX
WATER AND SEWERAGE AGENCY		WS 600
WATER AGENCY		W 601
SEWERAGE AGENCY		S 608

NOTE

AGENCY NAMES ARE LISTED BY INDEX NUMBER IN THE TEXT

REFER TO TABLES IV-1, IV-3, VI-1

SCALE IN MILES

0 1 2

NORTH

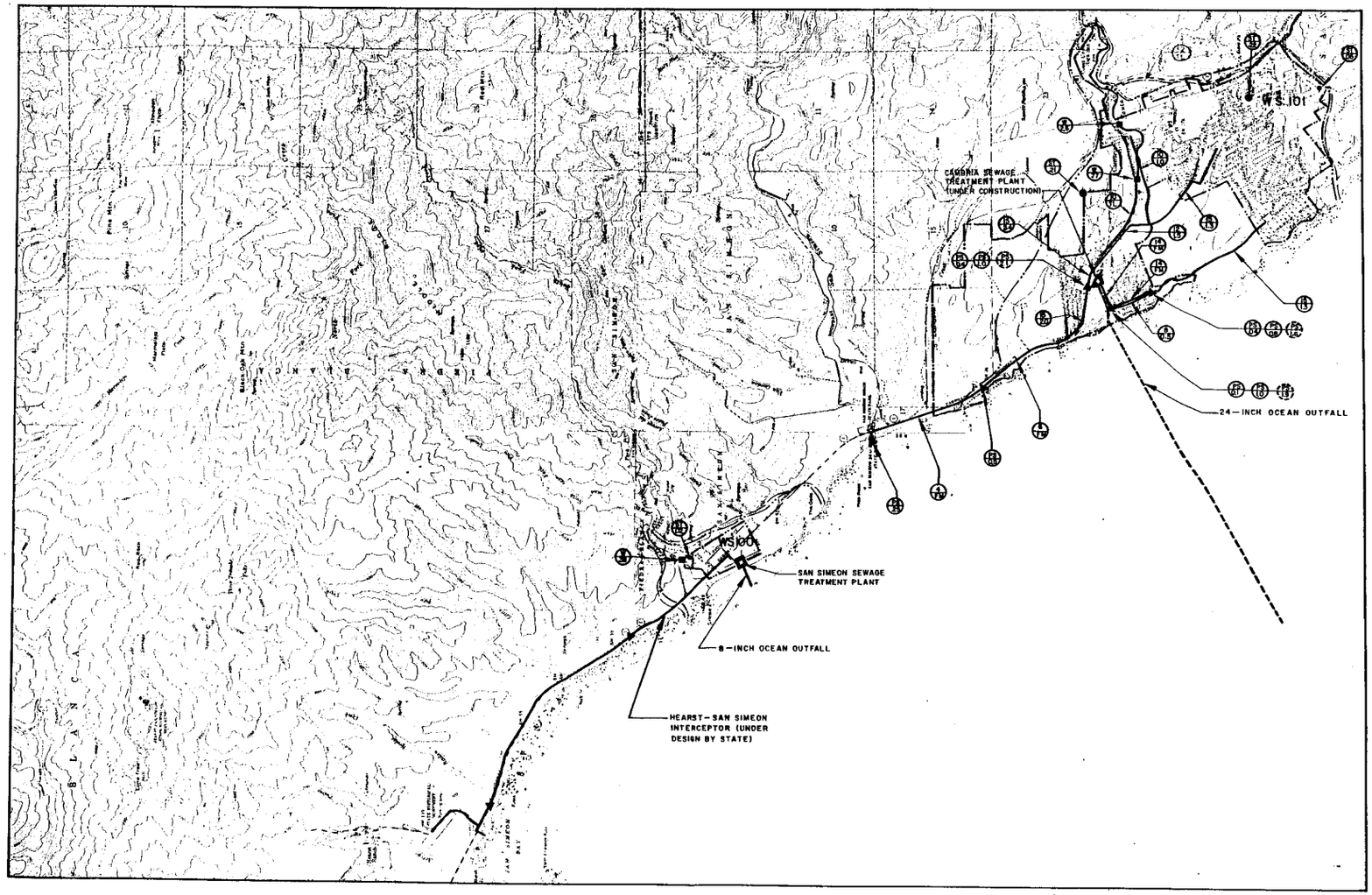


PLATE 6B

CENTRAL COASTAL STUDY AREA

MAJOR WATER AND WASTEWATER FACILITIES

LEGEND

	EXISTING	PROPOSED INITIAL	PROPOSED ULTIMATE
WATER FACILITIES			
TRANSMISSION LINES	——	——	
WELLS	■		
STORAGE TANKS	●	●	
TRANSMISSION LINE DIAMETER IN INCHES	(16)	(12)	
INSTALLED WELL CAPACITY IN MGD	(5)		
STORAGE TANK CAPACITY IN MILLION GALLONS	(4)	(6)	
SERVICE AREA			— — —
WASTEWATER FACILITIES			
PUMP STATION	▲	▲	
PIPELINE DIAMETER IN INCHES OVER CAPACITY IN MGD	(24)	(18)	(12)
FORCE MAIN DIAMETER IN INCHES	(24)	(18)	(12)
INTERCEPTORS	——	——	— —
PUMP STATION CAPACITY IN MGD	(8)	(5)	(8)
SERVICE AREA			— — —

AGENCY	BOUNDARIES	INDEX
WATER AND SEWERAGE AGENCY	—·—·—	WS 400
WATER AGENCY	— — —	W 404
SEWERAGE AGENCY	.....	S 408

NOTE

AGENCY NAMES ARE LISTED BY INDEX NUMBER IN THE TEXT

REFER TO TABLES IV-1, IV-7, VI-1

SCALE IN MILES

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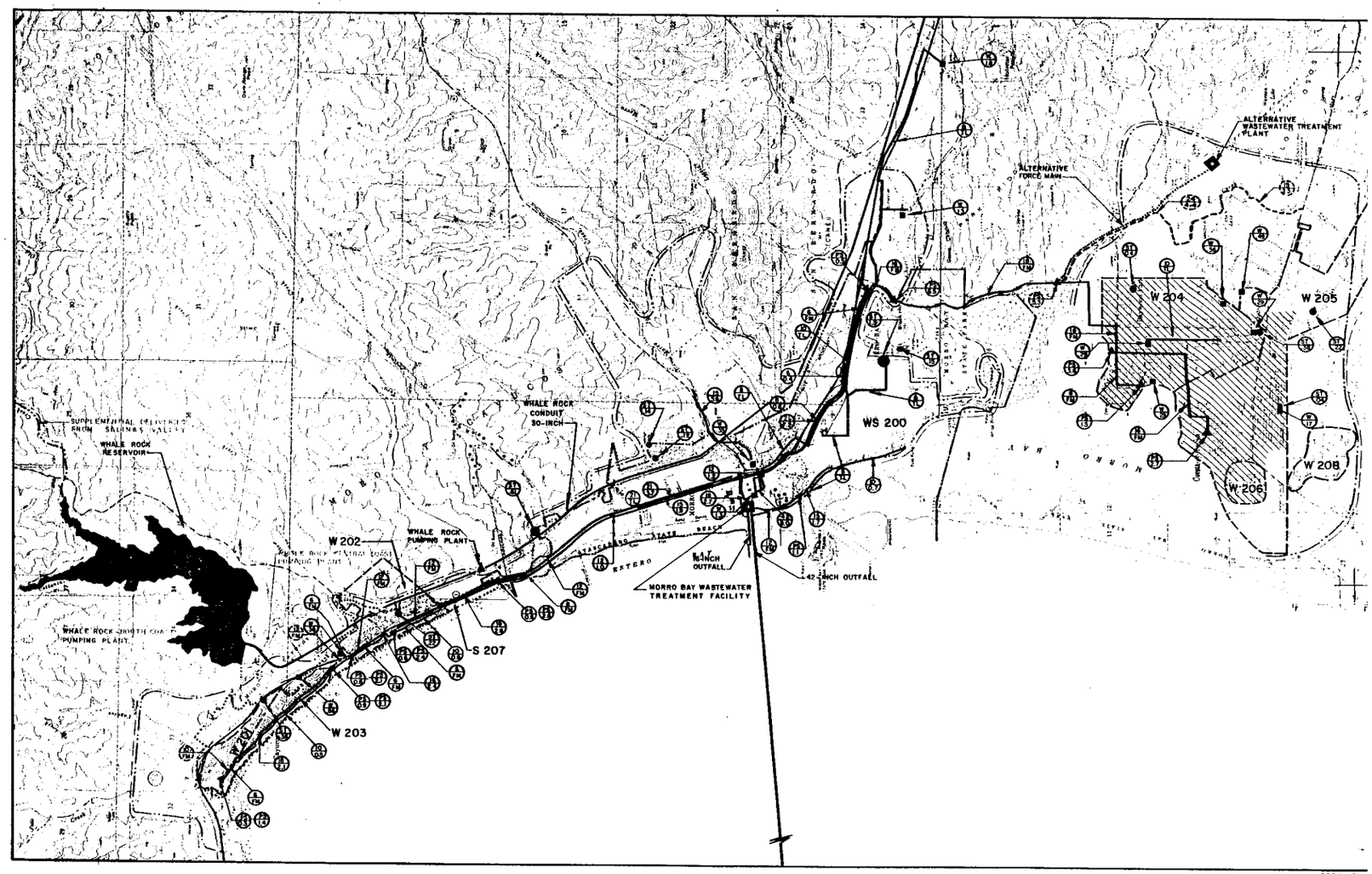
NORTH



2002-41

PLATE 6C

SAN LUIS OBISPO BAY STUDY AREA

MAJOR WATER AND WASTEWATER FACILITIES

LEGEND

	EXISTING	PROPOSED INITIAL	PROPOSED ULTIMATE
WATER FACILITIES			
TRANSMISSION LINES	——	——	
WELLS	■		
STORAGE TANKS	●		
TRANSMISSION LINE DIAMETER IN INCHES	⊕	⊕	
INSTALLED WELL CAPACITY IN MGD	⊕		
STORAGE TANK CAPACITY IN MILLION GALLONS	⊕		
SERVICE AREA			——
WASTEWATER FACILITIES			
PUMP STATION	▲		▲
PIPELINE DIAMETER IN INCHES OVER CAPACITY IN MGD	⊕		⊕
FORCE MAIN DIAMETER IN INCHES	⊕		⊕
INTERCEPTORS	——	——	- - -
PUMP STATION CAPACITY IN MGD	⊕		⊕
SERVICE AREA			——

AGENCY	BOUNDARIES	INDEX
WATER AND SEWERAGE AGENCY	—·—·—	WS 300
WATER AGENCY	— — —	W 302
SEWERAGE AGENCY	.....	S 303

NOTE

AGENCY NAMES ARE LISTED BY INDEX NUMBER IN THE TEXT

REFER TO TABLES IV-1, IV-12, IV-13 VI-1, VI-2

SCALE IN MILES

0 1 2

NORTH

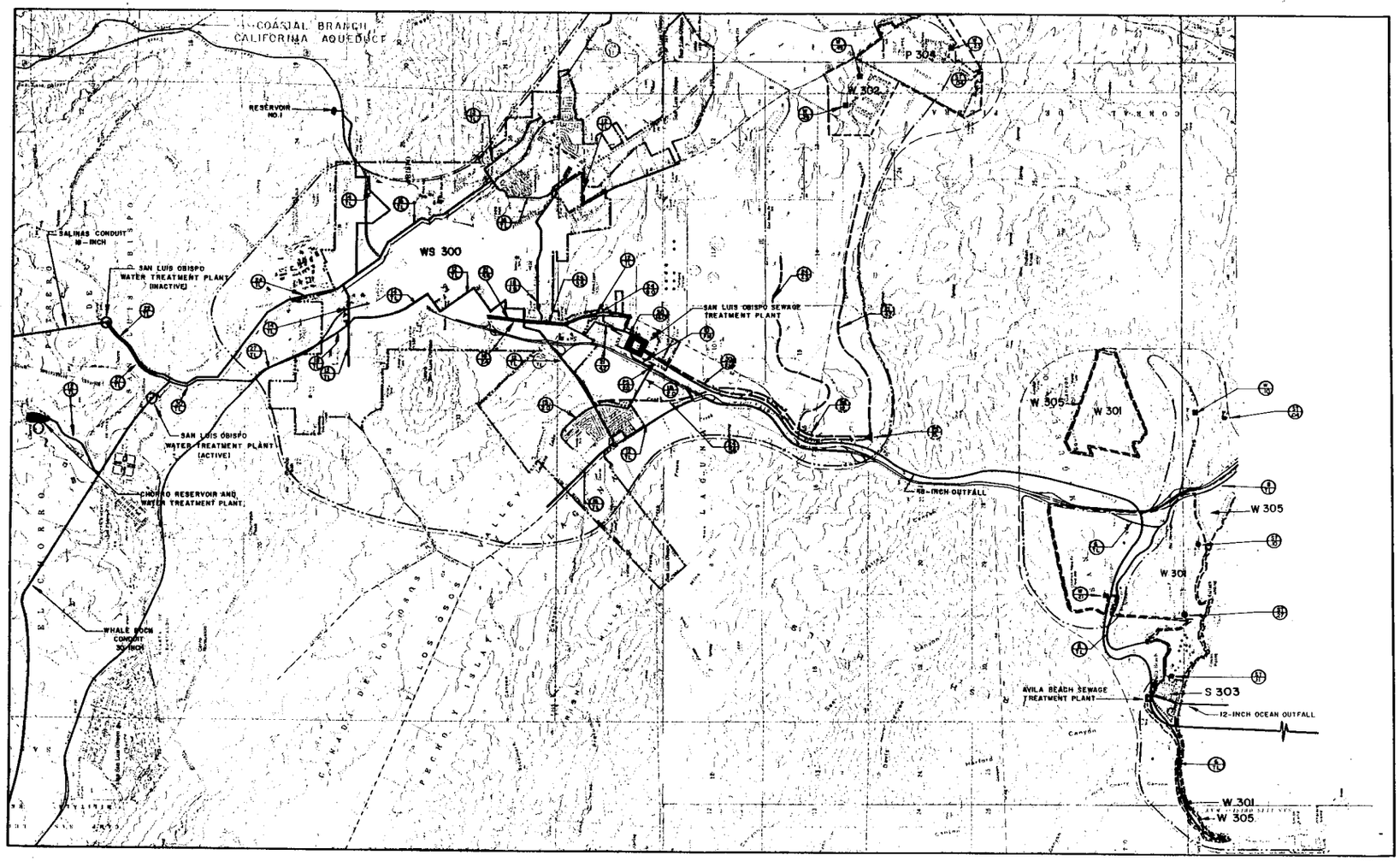


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PLATE 6D

SOUTH COASTAL STUDY AREA

MAJOR WATER AND WASTEWATER FACILITIES

LEGEND

	EXISTING	PROPOSED INITIAL	PROPOSED ULTIMATE
WATER FACILITIES			
TRANSMISSION LINES			
WELLS			
STORAGE TANKS			
TRANSMISSION LINE DIAMETER IN INCHES			
INSTALLED WELL CAPACITY IN MGD			
STORAGE TANK CAPACITY IN MILLION GALLONS			
SERVICE AREA			
WASTEWATER FACILITIES			
PUMP STATION			
PIPELINE DIAMETER IN INCHES OVER CAPACITY IN MGD			
FORCE MAIN DIAMETER IN INCHES			
INTERCEPTORS			
PUMP STATION CAPACITY IN MGD			
SERVICE AREA			

AGENCY	BOUNDARIES	INDEX
WATER AND SEWERAGE AGENCY		WS 401
WATER AGENCY		W 403
SEWERAGE AGENCY		S 405

NOTE

AGENCY NAMES ARE LISTED BY INDEX NUMBER IN THE TEXT

REFER TO TABLES IV-1, IV-19, IV-20, VI-1

SCALE IN MILES

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NORTH

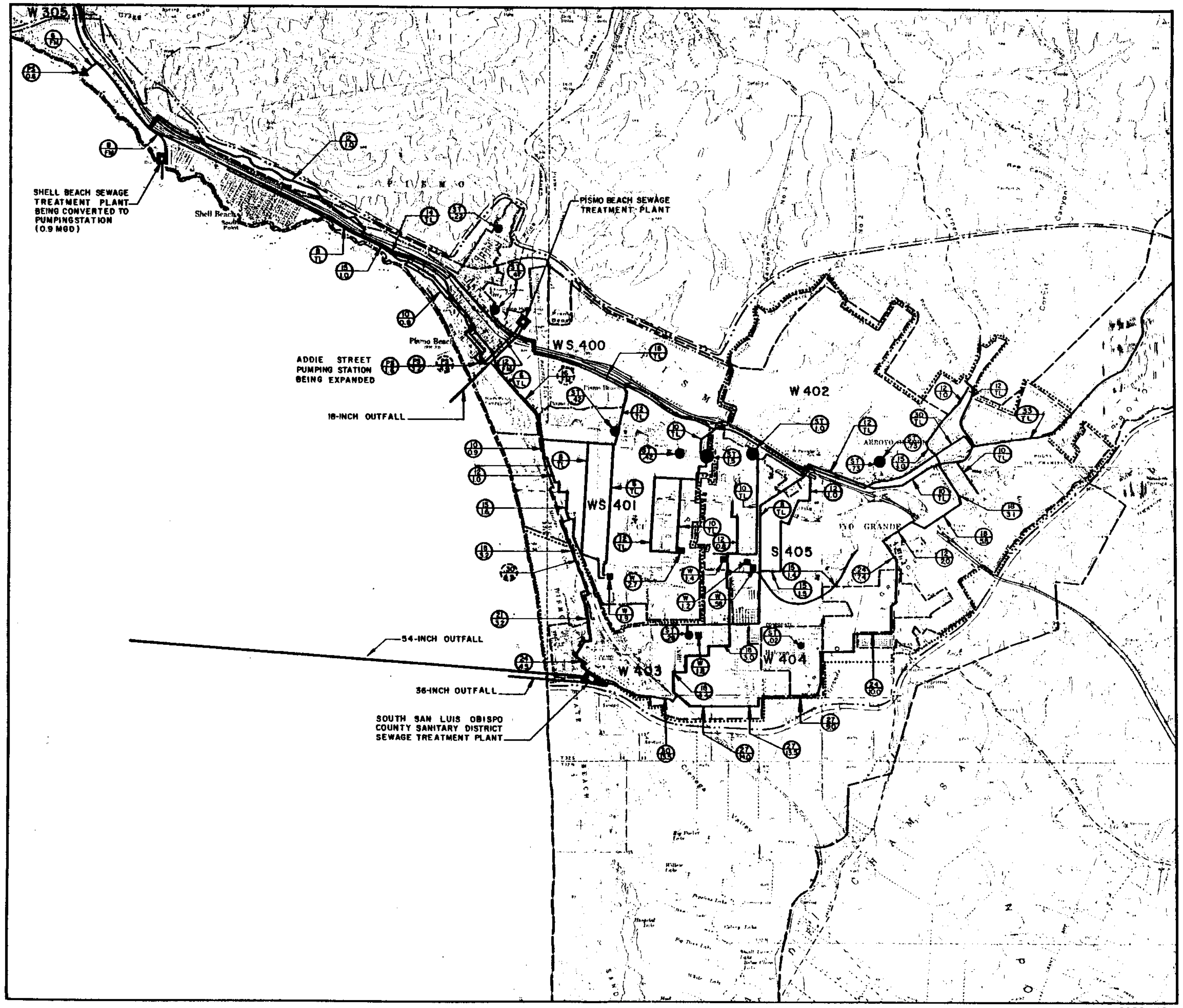

PLATE 6E

NIPOMO MESA STUDY AREA

MAJOR WATER AND WASTEWATER FACILITIES

LEGEND

	EXISTING	PROPOSED INITIAL	PROPOSED ULTIMATE
WATER FACILITIES			
TRANSMISSION LINES	———	———	
WELLS	■		
STORAGE TANKS	●		
SERVICE AREA			— —
TRANSMISSION LINE DIAMETER IN INCHES	(12/T1)		
STORAGE TANK CAPACITY IN MILLION GALLONS	(ST/2.5)		
INSTALLED WELL CAPACITY IN MGD	(W/50)		
WASTEWATER FACILITIES			
INTERCEPTORS		———	
SERVICE AREA		////	—·—·—
PIPELINE DIAMETER IN INCHES OVER CAPACITY IN MGD		(12/T8)	

AGENCIES	BOUNDARIES	INDEX
WATER AGENCY	———	W502

NOTE

AGENCY NAMES ARE LISTED BY INDEX NUMBER IN TABLES IN THE TEXT REFER TO TABLES IV-1, IV-24

SCALE IN MILES

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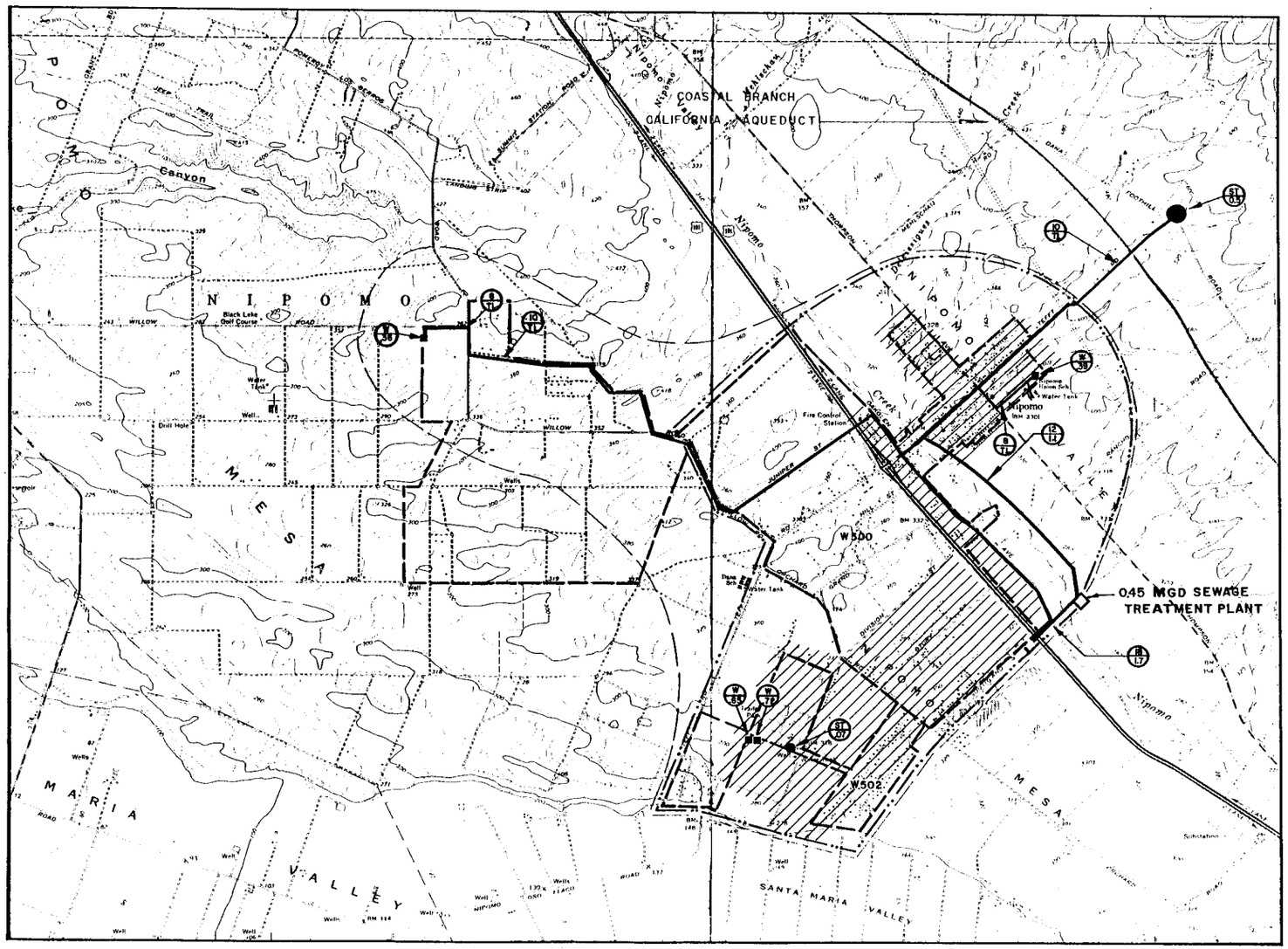
NORTH



2002-44

PLATE 6F

UPPER SALINAS STUDY AREA - SOUTH

MAJOR WATER AND WASTEWATER FACILITIES

LEGEND

	EXISTING	PROPOSED INITIAL	PROPOSED ULTIMATE
WATER FACILITIES			
TRANSMISSION LINES	——	——	- - -
WELLS	■		
STORAGE TANKS	●		
TRANSMISSION LINE DIAMETER IN INCHES	12	12	16
INSTALLED WELL CAPACITY IN MGD	10		
STORAGE TANK CAPACITY IN MILLION GALLONS	1.5		
SERVICE AREA			——
WASTEWATER FACILITIES			
PUMP STATION			
PIPELINE DIAMETER IN INCHES OVER CAPACITY IN MGD	16	18	
FORCE MAIN DIAMETER IN INCHES			
INTERCEPTORS	——	——	
PUMP STATION CAPACITY IN MGD			
SERVICE AREA		\\\\	—·—·—

AGENCY	BOUNDARIES	INDEX
WATER AND SEWERAGE AGENCY	—·—·—	WS 600
WATER AGENCY	— — —	W 601
SEWERAGE AGENCY	.....	S 608

NOTE

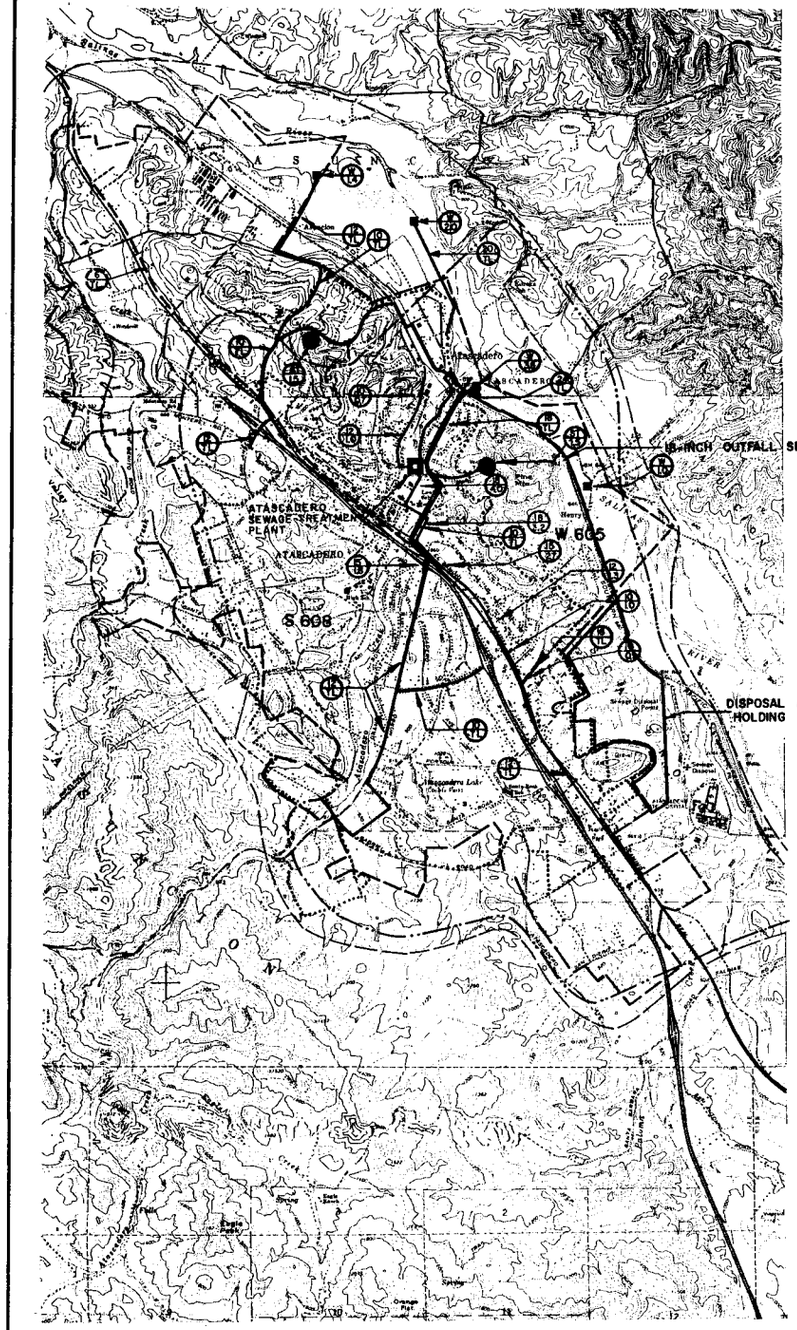
AGENCY NAMES ARE LISTED BY INDEX NUMBER IN THE TEXT

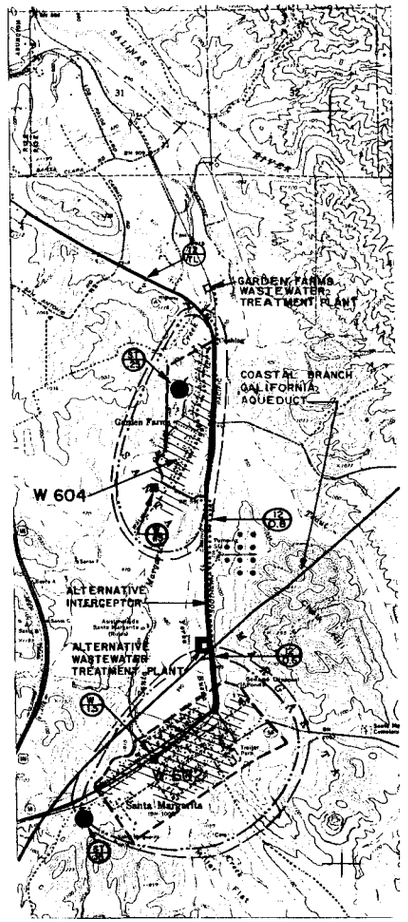
REFER TO TABLES IV-1, IV-27, VI-1

SCALE IN MILES

0 1 2

NORTH





2002-36

PLATE 6G

UPPER SALINAS STUDY AREA - NORTH

MAJOR WATER AND WASTEWATER FACILITIES

LEGEND

	EXISTING	PROPOSED INITIAL	PROPOSED ULTIMATE
WATER FACILITIES			
TRANSMISSION LINES	———		– – –
WELLS	■		
STORAGE TANKS	●		
TRANSMISSION LINE DIAMETER IN INCHES	12 TL		16 TL
INSTALLED WELL CAPACITY IN MGD	W 1.4		
STORAGE TANK CAPACITY IN MILLION GALLONS	ST 2.0		
SERVICE AREA			– – –
WASTEWATER FACILITIES			
PUMP STATION	▲	▲	▲
PIPELINE DIAMETER IN INCHES OVER CAPACITY IN MGD	15 1.0	15 0.8	
FORCE MAIN DIAMETER IN INCHES	10 FM	8 FM	4 FM
INTERCEPTORS	———	———	– – –
PUMP STATION CAPACITY IN MGD	PS 1.1	PS 2.5	PS 0.2
SERVICE AREA		\\\\\\	—··—

AGENCY	BOUNDARIES	INDEX
WATER AND SEWERAGE AGENCY	—··—	WS 600
WATER AGENCY	— — —	W 601
SEWERAGE AGENCY	·····	S 608

NOTE

AGENCY NAMES ARE LISTED BY INDEX NUMBER IN THE TEXT

REFER TO TABLES IV-1, IV-27, VI-1, VI-2.

SCALE IN MILES

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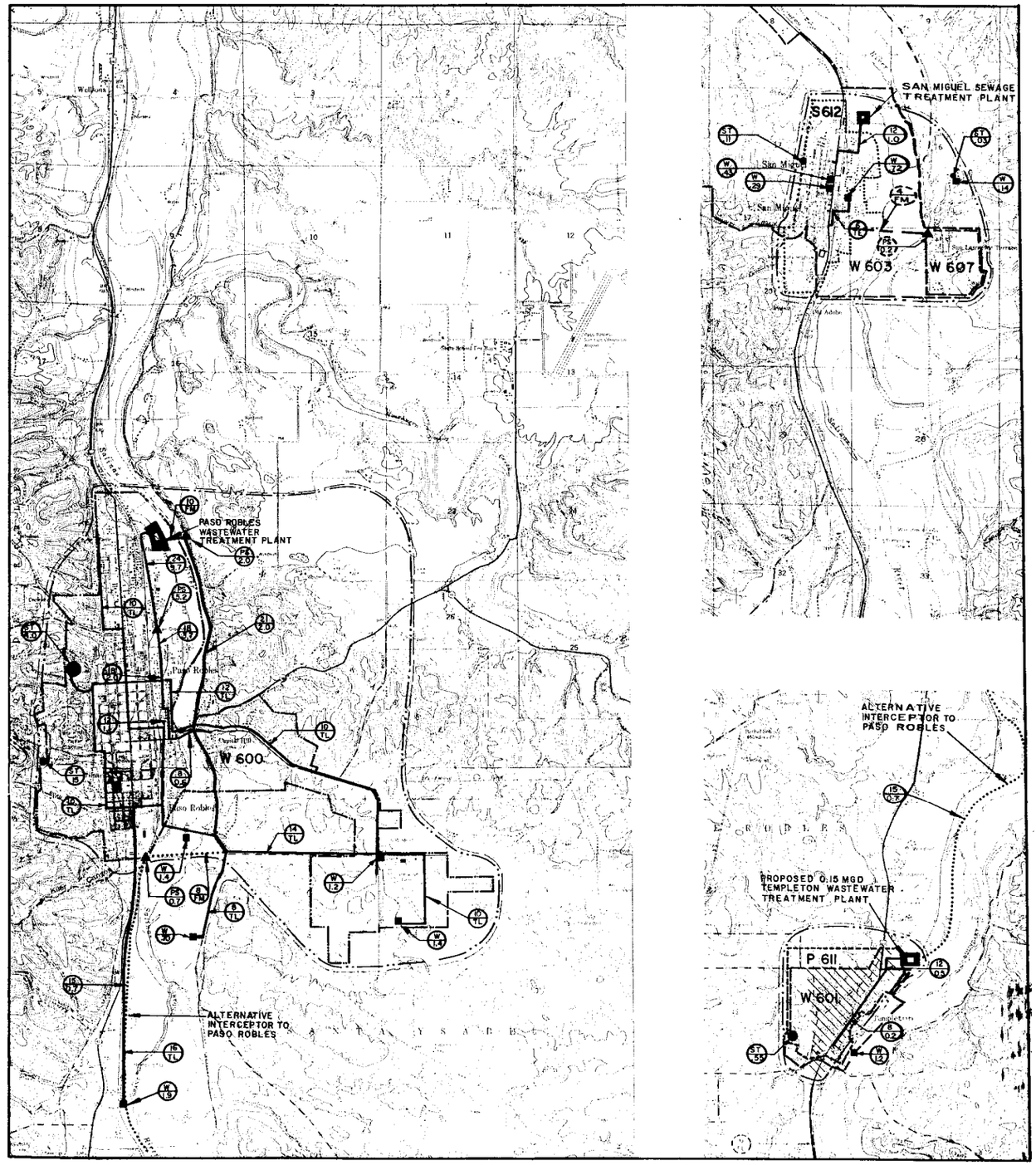

2002-35